APR 12 1926

Teachers College RECORD

Vol. XXVII, No. 8 April 1926

CONTENTS

A Modern Systematic vs. an Opportunistic Method of Teaching *Arthur I. Gates assisted by Mildred I. Batchelder and Jean Betzner* 679

The Training of Science Teachers *Charles W. Finley* 701

Needed Research in the Field of State Aid *Paul R. Mort* 707

Study Habits of High School Pupils *Percival M. Symonds* 713

The Office of Research in Home Economics at Teachers College 725

New Studies in Education 734

College News 742

Alumni Activities 760

BUREAU OF PUBLICATIONS

TEACHERS COLLEGE, COLUMBIA UNIVERSITY

$2.50 a Year 30 Cents a Copy

TEACHERS COLLEGE RECORD

VOL. XXVII, No. 8 APRIL 1926

JAMES E. RUSSELL, *Editor*
Dean of Teachers College

CLYDE J. TIDWELL, *Managing Editor*
Director, Bureau of Publications

THE TEACHERS COLLEGE RECORD is issued ten times a year, monthly except July and August. The subscription price is $2.50 per year; foreign postage, 50 cents; Canadian postage, 30 cents. Single numbers are 30 cents each, postpaid.

Publication office, Federal and 19th Streets, Camden, N. J., and 525 West 120th Street, New York City. Editorial and general offices at the latter address.

NOTICE TO SUBSCRIBERS: Notify the TEACHERS COLLEGE RECORD promptly of any change of address; otherwise copies lost in transit will not be duplicated.

Entered as second class matter March 17, 1926 at Post Office at Camden, N. J. under the Act of March 3, 1879.

Copyright, 1926, by TEACHERS COLLEGE, Columbia University.

IF you do not believe that a history of this country for the higher grades can be written in such an entertaining way that it will really hold the interest of boys and girls, then you should examine

ELSON'S UNITED STATES — ITS PAST AND PRESENT

IT IS A NEW TEXTBOOK BY

HENRY W. ELSON, *A. M., Litt. D.*

Formerly Professor of History, Ohio University, Athens, Ohio
Author of "*Modern Times and the Living Past*"

550 pages + xxxviii **Illustrated** **Price, $1.60**

AMERICAN BOOK COMPANY

New York Cincinnati Chicago Boston Atlanta

TEACHERS COLLEGE RECORD

VOL. XXVII APRIL 1926 NO. 8

A MODERN SYSTEMATIC VERSUS AN OPPORTUNISTIC METHOD OF TEACHING

AN EXPERIMENTAL STUDY *

BY ARTHUR I. GATES
Professor of Education, Teachers College

ASSISTED BY

MILDRED I. BATCHELDER AND JEAN BETZNER
Teachers in Horace Mann School, Teachers College

THIS study, conducted in the Horace Mann School during the school year 1923-24, was designed to disclose, in some measure, the outcomes in the form of significant information, skills, habits and attitudes of a year of school work carried on in one group by a modern systematic method and in another by what we have decided to term an "opportunistic" method. The experimental plan called for two groups equivalent in all pertinent respects: age; intelligence; previous school experience; home surroundings and training; social, moral, and emotional qualities; physical fitness and maturity; and other personal traits. During the work of the year, all relevant factors, such as attendance, time allotments to scholastic work, recesses, materials and equipment, individual attention in school and out, outside study, teacher assistance, etc., were to be kept as nearly equal as possible. For each group, one teacher only was provided. These two teachers, according to a composite of judgments of several experts in education who knew them both well, were exceptionally, and about equally, able. They were allowed no assistance in coaching or teaching their pupils inside the classroom or out; the only help they secured was clerical and mechanical, in the preparation of apparatus, materials, reports, and the like. The end sought was the equivalence of all factors except the methods of teaching and, necessarily, the particular curriculum materials required to put the methods into effect.

* From the research department of the Horace Mann School.

The methods of selecting the pupils for the two classes should be described in some detail, since without equivalence of the groups an appraisement of the methods of teaching is quite impossible.

SELECTING PUPILS FOR THE TWO GROUPS

From the large number of candidates for the first grade in the school, pairs of pupils, who were as nearly as possible alike in all the respects considered, were selected, one pupil for each of the experimental classes. Twenty-five such pairs completed the year's work satisfactorily. How nearly equivalent the two groups were is indicated in the following averages and distributions of ability—in terms of the average deviations from the average.

In the measurable traits given in Table I the two groups are substantially equivalent. In sex, age, Stanford-Binet mental age and intelligence quotient, writing, drawing a man, and drawing designs, the group are almost exactly equivalent. In the Detroit Intelligence Test, a general information test, an alphabet, a word pronunciation, a word selection, an oral spelling, and an oral arithmetic test made up for the purpose, the differences are negligible, as may be observed by comparing them with the average deviations. In some of the tests, such as speed of reading words, oral reading of passages, pronunciation of words, and oral spelling, all, or nearly all, of the pupils in both groups failed completely. In other words, they began the work of the first grade uninfluenced by previous instruction in these functions. In sum, the two groups were equal in sex, age, mental brightness, mental maturity, general information, and scholastic equipment.

As far as possible, equivalence in other traits was secured. About twenty of the pupils came from the junior primary division of the Horace Mann School. For these children, the combined estimates of several teachers for (1) physical maturity and fitness, (2) mental maturity and common sense, (3) social maturity and adaptability, (4) emotional maturity and stability, and (5) educational maturity and fitness for scholastic work were available. The children were matched individually in these traits and assigned to the two groups in equal number. The pupils appearing at the school for the first time were appraised as well as possible in the same traits during the first two weeks and rearranged to yield equivalent pairings. For all children, the measures of height, weight, strength, and physical fitness made by the school physicians were taken into account. We believe that, on the whole, the two groups were as nearly equivalent in traits re-

lated to possibilities for educational achievement as can be obtained at the present time.

TABLE I

MEAN (M) AND MEAN DEVIATION (MD) IN VARIOUS TRAITS AT THE BEGINNING OF THE SCHOOL YEAR*

	Total Number	Number Boys	Age		Mental Age		Intelligence Quotient	
			M	*MD*	*M*	*MD*	*M*	*MD*
Systematic Group	25	12	6.3	.29	7.3	.55	116.3	.97
Opportunistic Group	25	12	6.3	.31	7.3	.60	117.6	1.11

	Detroit Intelligence		General Information		Alphabet Test		Pronunciation Word Test	
	M	*MD*	*M*	*MD*	*M*	*MD*	*M*	Failures
Systematic Group	37.8	15.5	37.12	9.08	129	48	1.3	20
Opportunistic Group ..	35.8	16.1	37.04	8.38	122	50	2.7	17

	Speed of Reading Words	Oral Reading Paragraphs	Word Selection Test		Oral Spelling	
	Failures	Failures	*M*	*MD*	*M*	*MD*
Systematic Group	all	all	5.2	2.8	0.9	0.8
Opportunistic Group ..	all	all	5.0	2.9	1.6	1.8

	Oral Arithmetic		Writing		Drawing a Man		Drawing Designs	
	M	*MD*	*M*	*MD*	*M*	*MD*	*M*	*MD*
Systematic Group	18.0	7.6	3.6	1.7	13.8	3.3	17.2	3.1
Opportunistic Group	16.6	7.9	3.7	1.7	13.7	3.5	17.2	2.9

* Sometimes the number of total failures is indicated.

THE METHODS OF TEACHING

Each of the two methods, the "modern systematic" and the "opportunistic," was followed by an exceptionally able teacher who was experienced in the method and believed it to be, on the whole, the best one. Both teachers were interested in the project as an experimental study; both, understanding that the results would in no way reflect upon their professional reputation, taught their pupils as under ordinary circumstances except for certain imposed limitations and regulations which were cheerfully accepted and faithfully observed. Both teachers followed the same general schedule, the same time assignments to different phases of the work, recesses, lunch periods, assembly music, gymnasium work, etc. Neither teacher gave any out-of-school time to individual pupils nor allowed others to do so; neither suggested home work and each as far as possible, prevented it. Neither was given any assistance in teaching; neither enjoyed any advantage in clerical or other help, in funds for materials, in special demonstrations, etc.

Each teacher drew up her plans at the beginning of the year and carried them through. In addition to the general plans, detailed records of much of the work, as it actually occurred, were made. On certain occasions, visitors, whose purposes were unknown to the teachers, observed and compared the work of the two rooms and, on occasional days, verbatim reports of all that was said and detailed accounts of all that was done by both teacher and pupils were recorded by an expert stenographic reporter. From these sources the differences in the teaching methods were discerned.

The two methods seem most adequately described by the terms "modern systematic" and "opportunistic." The term "project method" we have avoided partly because "projects"—if we mean thereby "a unit of educative work in which the most prominent feature is some form of positive and concrete achievement"—such as the making of a table or the installation of an electric bell outfit (as the term was first used by Snedden[1])—were used in both groups. It seemed inadvisable, furthermore, to use the term because it has come to be applied to several methods of education that differ in important respects.

The Systematic method and the Opportunistic differed primarily in these respects: The former adopted a course of study that was more definitely determined, outlined, and organized beforehand than

[1] David Snedden, in *School and Society*, 1916, p. 420.

the other. The daily lessons were more definitely arranged, periods for study of definite lessons more rigidly prescribed, the accomplishment of these particular assignments more strictly required, and the order of the development of topics more fully determined by the nature of the subject matter and more rigorously adhered to. The Opportunistic method utilized a less definite program of studies and activities while aiming more to conform to the inclinations and interests of the pupils. To a greater extent the teacher awaited, and attempted to utilize, the self-initiated urges of the pupils to learn to read, write, spell, etc. To a smaller extent were set up lessons and projects which the pupils were encouraged or required to attack; to a greater extent the policy of awaiting special incentives or opportunities which provided a "need" for certain information or skill was followed. Given the ripe opportunity the facts or abilities were furnished as the occasion demanded. Under such a procedure, the words to be read were those found in an invitation to a party from another grade; the words to be spelled and written were those required to answer the invitation, etc. The subjects were, consequently, taught less systematically and more in accordance with the demands of such opportunities as occurred or were provided. The Systematic teacher did not, of course, disregard special opportunities for motivating the teaching, although she depended less on them, but, on the contrary, availed herself of them. The differences between the two methods were of degree, but they were appreciable. The Systematic group were not required to adhere slavishly to particular texts with daily assignments of so many pages; but, nevertheless, they were expected to master certain materials and skills which the teacher had herself arranged in a developmental order. The comparison, then, is not between the extreme traditional daily-lesson-in-the-book-plus-recitation method and an extreme do-as-you-like procedure, but between what, for want of better terms, may be called modern systematic teaching with considerable emphasis on pupil initiative and a considerably less systematic procedure in which the pupils control the amount, kind, and order of learning, with the teacher taking advantage of opportunities for instruction as they are afforded.[2]

The general schedule of exercises, followed throughout the year, was substantially the same for both classes.

[2] If it is assumed that the "Modern Systematic" procedure is merely a plan of assigning, studying, and reciting of lessons, the significance of this article will be missed. The method, substantially as it was applied to the teaching of reading, will be discussed in a forthcoming article by Miss Jean Betzner in the *Teachers College Record*.

THE MEASUREMENT OF ACHIEVEMENT DURING THE YEAR

The achievements of the pupils during the year in information and skill were measured by a battery of tests, many of them given individually and most of them constructed specially for the purpose.

TABLE II

INITIAL AND FINAL SCORES AND GAINS OF EACH GROUP AND THE DIFFERENCES IN GAINS BETWEEN THE TWO GROUPS

		1.	2.	3.	4.	5.
		Reading* Capital Letters	Reading* Lower Case Letters	Reading* Digits	Word Selection	Word Pronunciation
Systematic Group	Initial Score	129	127	77	5.2	1.3
	Final Score	60	73	37	14.1	27.5
	Gain	69	54	40	8.9	26.2
Opportunistic Group	Initial Score	122	120	76	5.0	2.7
	Final Score	62	72	49	11.2	17.7
	Gain	60	48	27	6.2	15.0
Difference in Favor of Systematic Group		9	6	13.0	2.7	11.2
P.E. Difference		*5*	*5*	*3.2*	*0.55*	*2.0*

		6.	7.	8.	9.	10.	11.
		Oglesby Silent Reading	Horace Mann Oral Reading	Haggerty Reading Test I	Haggerty Reading Test II	Spelling	Writing Quality
Systematic Group	Initial Score	--	--	--	--	--	--
	Final Score	21.3	7.2	7.9	4.5	8.9	3.8
	Gain	21.3	7.2	7.9	4.5	8.9	3.8
Opportunistic Group	Initial Score	--	--	--	--	--	--
	Final Score	12.2	2.8	3.8	2.9	6.2	4.2
	Gain	12.2	2.8	3.8	2.9	6.2	4.2
Difference in Favor of Systematic Group		9.1	4.4	4.1	1.6	2.7	−0.4
P.E. Difference		*1.1*	*0.4*	*0.85*	*0.5*	*0.6*	*0.25*

* Tests marked with an asterisk are scored in number of seconds; hence the smaller the figure the better the score.

		12. Writing Speed	13. Drawing a Man	14. Drawing Designs	15. Arith. Problems	16. Perception of Numbers	17. General Information
Systematic Group	Initial Score	--	13.8	17.2	--	--	37.1
	Final Score	30	16.3	20.0	24.9	14.0	44.8
	Gain	30	2.5	2.8	--	--	7.7
Opportunistic Group	Initial Score	--	13.7	17.2	--	--	37.8
	Final Score	36	17.3	19.3	21.8	12.1	44.4
	Gain	36	3.6	2.1	--	--	7.4
Difference in Favor of Systematic Group		−6.0	−1.1	0.7	3.1	1.9	0.3
P.E. Difference		*4.2*	*0.8*	*0.8*	*1.2*	*0.9*	*2.0*

All of the tests in which any of the pupils might score at all were given at the beginning of the year and utilized in equating the groups; most of them were repeated near mid-year, and all, together with additional ones, were given at the end of the year. In many of the functions tested the progress during the year was determined by subtracting the initial scores from the final scores; in others, the initial score was demonstrably, or assumed to be, zero and the final scores were taken as representing the gains in ability. Table II shows the results in terms of average gains during the full year; the results of the mid-year tests are not included.

Achievement in Reading.—The difference in particular methods in reading used by the two groups is suggested in the following data provided by the teachers. To the question, "Did you make it clear to the pupils that you expected them to learn to read?" the Systematic teacher answered, "Yes," and the Opportunistic, "No. The majority expressed a wish to read (home influence). I showed them attractive books, read to them, set the stage for reading." To the question, "Did you ever or often insist on efforts to learn to read?" the Systematic teacher replied, "Yes, with two children I did insist through social pressure that they learn to read. This only lasted until they had some control of the material; then there was no need of insistence." The Opportunistic teacher answered, "Never. As a matter of fact insistence was unnecessary. The few who lacked interest had been 'nagged' at home." In answer to the question as to how much time per day was spent in activities arranged to provide opportunities to

read, the Systematic teacher reported, "Never more than fifty minutes a day, but as nearly fifty minutes as possible"; the Opportunistic teacher reported, "At least an hour." The detailed procedure in daily work otherwise is sufficiently suggested in the general comparison of the two methods given above.

The first nine tests measure various phases of silent and oral reading ability. The first test consisted of the letters of the alphabet printed twice in irregular order in large capitals; the second was similar, except that lower case letters were used. The pupils, in individual tests, read the letters aloud. Both time and errors were scored. Table II gives the results for speed only. The Systematic group shows slightly higher average scores and in the results for errors, slightly fewer mistakes. The differences in gains are larger than the probable error but less than twice as large. They are, therefore, neither very great nor very reliable.

The third test required the oral reading of 40 digits, 0 to 9 inclusive, irregularly arranged on a printed form. In this test, both in time and in number of errors, the Systematic group showed some superiority—the difference in time amounting to four times the P.E.

The fourth test was designed to measure the speed and accuracy of recognizing words. It consists of a printed form of exercises, such as:

hat	sat	pot	rat	bat	hat

the words increasing in difficulty. The pupil encircles the word in the series which is identical with the one at the left. Score is the number of exercises right. The Systematic group showed some superiority—amounting to about five times the P.E.—in this form of word recognition.

The fifth test was a form of the Gates Pronunciation Test [3] which requires the oral reading of 100 words which range from short and easy words, such as *to* and *it,* to longer and harder ones, such as *handkerchief* and *affectionate.* The score is the number of pronunciations correct. The Systematic class averaged 27.5 words; the Opportunistic, 17.7. The difference between the groups was here considerable—five and a half times the P.E.

The sixth test was the Oglesby Test of Silent Reading.[4] It begins with words, such as dog and chair, and later introduces phrases, the longest of which is: "a mother giving her little girl some water." The

[3] Described in the *Teachers College Record,* November, 1924.
[4] Described in the *Journal of Educational Research,* June, 1924.

pupil reads silently, marking a picture to demonstrate his comprehension of the text. In this text the Systematic group showed a clear superiority—the difference being more than eight times the P.E.

Test seven was a Horace Mann oral reading test patterned after Gray's Oral Reading Test, which consists of a series of passages ranging from very easy to very hard. The Systematic group was clearly far more advanced in this type of oral reading.

Tests eight and nine were Parts 1 and 2, respectively, of the Haggerty Silent Reading Scale, which consists of sentences of increasing difficulty to be read silently. In both, the Systematic group excelled.

In all nine tests of reading skills, then, the Systematic group surpasses the Opportunistic. It may be noted, also, that the superiority is greater in word pronunciation, in silent reading of words, phrases, and sentences, and in oral reading of passages than in the simpler tests of recognition of letters or words.

The most interesting results appear, not in the averages shown in Table II, but in the records of the particular individuals in the two groups. For example, in the oral reading test—in which the scores are given in terms of "reading ages"—the distributions of abilities in the two groups were as follows:

READING AGE

	Failures	6–7 Years	7–8 Years	8–9 Years	9–10 Years	10–11 Years
Systematic	0	16	4	0	4	1
Opportunistic	15	5	4	1	0	0

"Failure" meant inability to read the following passage in 40 seconds or less and with 6 errors or less:

A boy had a cat.
He did not feed his cat.
The cat ran away.
A little girl found the cat and fed him.
Etc., 21 more words.

Fifteen of the Opportunistic group failed in this test; whereas all of the Systematic group succeeded well enough to secure some score. Another significant result was the greater spread of abilities in the Systematic group and the relatively large number making very high achievements—five exceeded the norms for average nine-year-old

pupils. It will be recalled that the average I.Q. of these groups was about 117, and the range was considerable. The Systematic method achieved some reading ability with all pupils, without holding the more able to a common level. In the silent reading tests the results were similar.

Achievement in Spelling.—In both groups, the training in spelling and writing was one and the same; no drills in silent or oral spelling were conducted. The differences in the methods appear in the teachers' descriptions. The Opportunistic teacher gave no specific drill in spelling: only "toward the end of the year" were the words which the children could write listed, noted, checked up, and compared with "the second grade list in Pearson and Suzzallo"; "the children learned to spell certain words because of their zeal in writing." The Systematic teacher selected the word "needed for a chart or sign or some other purpose," wrote it on the board twice, and required trials at writing it from memory. "The Pearson-Suzzallo list for Grade I guided me but did not limit what the children needed to write." Children were thus given a method of mastering the spelling; spelling was required since the teacher "scarcely ever let children *copy* any word during the first semester."

The test in spelling, given at the end of the year, consisted of words taken from the Ayres-Buckingham list. All of the words selected were taken from a longer list that had been approved by both teachers as containing no words incompatible with the verbal experiences of first grade children. The list follows:

> me, go, it, is, the, man, bad, red, him, book, school, street, home, white, sister, brother, summer, railroad, teacher, uncle.

Needless to say, the teachers did not know in advance what words were to be used, and the words were selected by a person who did not know what words either teacher had taught. Tests were given to the pupils one at a time; the examiner pronounced the word and recorded the oral spelling.

Table II shows that the average score of the Systematic group exceeds that of the Opportunistic by an amount equal to 4.5 times the P.E. The distribution of scores, grouped by two's, is shown on page 689.

As in reading, the Systematic group shows no complete failures; whereas the Opportunistic group shows failure in 20 per cent of the cases. The Systematic group again shows a large number achieving high scores.

Scores	Systematic	Opportunistic
18–19	1	0
16–17	2	1
14–15	0	0
12–13	2	0
10–11	4	6
8– 9	8	6
6– 7	2	1
4– 5	3	2
2– 3	3	4
0– 1	0	5

Achievement in Writing.—In writing is found a characteristic type of difference in teaching which may be expected from the natures of the two general methods. The Opportunistic teacher reports: "Writing was a great interest in this class; from my point of view, not a great need. However, I followed the interest and taught writing. The ease with which manuscript writing is acquired by little children is a great factor in their interest. They love to illuminate their capitals with crayons, for instance. All writing, at first, was on the blackboard or with crayons and large paper. I wrote the word on the board. They wrote it from memory. Sometimes we all had difficulty with the same letter. Then we had an old-fashioned drill. We wrote every day after the first six weeks from 5 to 30 minutes." This description epitomizes beautifully the Opportunistic method, perfectly conducted. Although the teacher did not see "a great need" for writing, she seized and utilized the apparent interest which resulted in a relatively considerable amount of training.

The Systematic teacher taught writing definitely in two weekly periods, on the average, of from 20 to 30 minutes after the first of December. Words needed for some purpose or those selected from the Pearson-Suzzallo speller were used.

The test in writing given at the end of the year differed from that given at the beginning, since at the beginning very few children could write either words or letters. Both classes had been taught the print-like or manuscript writing. For the final test, the sentence *The boy saw a cat* was placed on the board in manuscript writing. After a half-minute period, the tests proper—two periods of one minute each with a rest interval between—were given. The specimens were graded on a scale corresponding in character to the Thorndike scale,

independently, by two experienced judges.[5] Not being certain that the formula for combining speed and quality in script[6] would apply to the manuscript type of writing, these two measures are given separately. Both tell the same story—the Opportunistic group is superior by amounts less than twice the P.E. The distributions of scores are nearly identical; no complete failures appeared in either class.

Achievement in Drawing.—The procedure in the teaching of drawing in the two classes is, in general characteristics, the same as that of writing and therefore need not be repeated.

Two tests of drawing were used at the end of the year: (1) Goodenough's Drawing Test, in which the children are instructed to draw a man and are thereafter left to their own devices, and (2) an improvised test in drawing from drawn models.

In the first test, the directions used by Goodenough were used here. Pupils were allowed unlimited time. The results were scored by Goodenough's method of giving specified credit for each relevant item included.[7]

For the copying test, large drawings of a circle, a square, and a hatchet were displayed before the class. The pupils reproduced these drawings. There was no time limit. The score combined credits for the separate features of each drawing and a general estimate of quality. In both drawing tests and in the writing test above described, the papers for the two classes were shuffled before they were judged.

Table II shows that the Opportunistic group excelled slightly, but scarcely reliably, in the first test; whereas the Systematic group excelled by a similarly small amount in the second test. If the scores for the two tests were equally weighted and combined, the averages for the two groups would be approximately equal.

Achievement in Arithmetic.—Neither teacher attempted to teach any considerable amount of arithmetic during the year. Neither used a textbook and neither assigned daily or other regular periods to this subject. Both had in mind the same objective—to establish ability to use foot rules and yardsticks, to count articles used in work, to read page numbers or dates on the calendar, to understand the calendar and clock, to use familiar coins, etc. The extent of the facts and skills held as desirable differed little between the teachers.

[5] Miss Ella Woodyard and Miss Esther Hemke.
[6] Gates, A. I., in *Journal of Educational Psychology*, March, 1924.
[7] As described by Florence Goodenough, in Master's dissertation, Department of Psychology, Columbia University.

The main difference was in the methods of teaching, which need not be reviewed again; the one was more systematic and direct than the other.

The test in arithmetic used at the end of the year was made up without knowledge of what was being done or taught in either class. The test consisted of forty-one problems—grouped under seventeen headings, as shown below,—which were given orally by the examiner to each child individually. Answers were oral. The score was the total number correct. The problems were mainly practical and realistic ones concerned with everyday affairs. They are given herewith.

ORAL NUMBER PROBLEMS

1. Count up to 10 as fast as you can.
2. *a.* Now count by 10's up to 100.
   b. Now count by 2's up to 20.
   c. Now count by 5's up to 25.
3. If you made 2 clay dishes to-day and 1 to-morrow, how many clay dishes would you have then?
4. If you brought 2 crackers for your lunch and someone gave you 2 more crackers, how many would you have altogether?
5. *a.* How many are 5 and 5?
   b. How many are 3 and 3?
6. *a.* Give me ½ of this sheet of paper (Examiner shows paper 5 x 8).
   b. Now give me ⅓ of this sheet of paper.
   c. Now give me ¼ of this sheet of paper.
   d. Now give me ⅔ of this sheet of paper.
7. If you made three clay dishes to-day and then broke one and threw it away, how many clay dishes would you have left?
8. If you had four apples and gave three apples away, how many would you have then?
9. Now we will play store. Here are 10 cents and I have some postage stamps to sell. (Examiner has 10 pennies and some one- and two-cent stamps.)
   a. How many two-cent stamps can you buy for 10 cents?
   b. Here are 5 cents and you want a one-cent stamp. Pay me. How many cents will you have left?
   c. Here are 10 cents and you want 3 two-cent stamps. Pay me. How much money should you get back?
   d. Here are 5 cents and you want 3 one-cent stamps. Pay me. How much money should you get back?
   e. Here are 10 cents and you want 3 two-cent and 2 one-cent stamps. Pay me. How many are left?

10. *a.* Give me 4 of these pennies. (Examiner shows 10 pennies.)
    b. Now give me twice as many.
11. If you bought milk with crackers for lunch for 11 cents and gave your teacher 15 cents, how much change would you get back?
12. If you bought cocoa with crackers at 10 cents and bought a sandwich for 7 cents, how much would you pay your teacher?
13. How much are 2 and 3; 3 and 4; 6 and 4; 8 and 2; 8 and 6; 4 and 5; 6 and 3; 8 and 3?
14. *a.* What time is it now? (Examiner—Adjust your watch.)
    b. eight o'clock.
    c. quarter of 9.
    d. quarter past 10.
    e. half past 12.
    f. 20 minutes to 2.
    g. 10 minutes past 4.
15. If you have 8 blocks and throw 3 away, how many will you have left?
16. John gives me 4 cents and Harry gives me 4 cents and Dick gives me 2 cents. How many cents have I?
17. If you had 6 crackers and wanted to give them to 3 children, how many would you give each?

These problems were given individually and were read as above. The examiner recorded each individual section of a question as + or —. If —, the wrong response was noted. The score was the number of individual parts correct. (Maximum score is 41.)

Table II shows the differences between the two groups. The Systematic group excels by a trifle less than three times the P. E.

A second, but minor test in arithmetic, already considered under reading, consisted of the oral reading of a series of digits. In this test the Systematic group proved superior by an amount equal to nearly four times the P.E. A third test measured the rate of perceiving the identity of, or the difference between, pairs of printed numbers, such as 186 186, 127 137, etc. In this test (No. 16, see Table II) the Systematic group excels by twice the P.E.

On the whole, then, the differences in achievement in arithmetic favor the Systematic group.

ACQUISITION OF GENERAL INFORMATION

A series of questions, designed to measure more or less fully the acquisition of information of a practical and general sort, different, in the main, from what is typically found in Systematic courses in reading, arithmetic, etc., was constructed before the teaching in the groups was far under way. How significant this test is, how practical, how fully it may serve to test the claim, sometimes made, that forms of Opportunistic teaching typically result in the acquisition of

more information about people, practical affairs, and the surrounding environment, than systematic teaching, may be judged by the reader after observing the actual questions asked. These questions were given orally by the examiner to each child individually; usually two sittings of twenty minutes each were required.

Information Questions

1. Where do you live?
2. What is the name of this building (place) we are in?
3. How old are you?
4. When were you born?
5. When is your birthday?
6. Tell me the name of some part of your body. Another, etc., until 10 are named if possible.
7. The same for tree.
8. The same for house.
9. The same for automobile.
10. Where does the president live?
11. Who is president?
12. Who was president before him?
13. Who was the first president?
14. Who was Abraham Lincoln?
15. Tell me one thing your heart does for your body. Another.
16. How many minutes would you boil an egg?
17. How many minutes would you boil a potato?
18. Tell me the name of a tree. Another, 10 if possible.
19. The same for animal.
20. The same for flower.
21. The same for vegetable.
22. Tell me the kind of a shop where you buy: medicine; postage stamps; writing paper; ice cream; train tickets.
23. Tell me the name of the month when Christmas, Fourth of July, Thanksgiving, Washington's Birthday, April Fool's Day, Memorial or Decoration Day, Columbus Day, New Year's, Hallowe'en, Valentine's Day comes.
24. Tell me the names of the months when we have flowers; when it snows; when we find nuts; when it is hot.
25. Stand up a minute.
    How far is it from you to me? (Child stands 3 feet away.)
    How far is it from your chair to my chair? (Chairs are 1 foot away.)
    How far is it from San Francisco to New York?
    How far is it from New York to Albany?
    How far is it from New York to Boston?

How far is it from New York to San Francisco?

26. Tell me some way the policeman helps us. Another, another.
27. Where do the birds go in winter?
28. Where does butter come from? What is it made of? The same for: beer, milk, potatoes, coal, eggs, paper, cotton, leather, wool.
29. Now I am going to say a lot of things and you tell me what is right to do. Is it right to whisper, to steal, to be sick, to help, to mark on desks?
30. Suppose you were lost. Tell me one place you would go. Another.
31. Suppose your dog was hurt. Tell me one place you would go for help.
32. Suppose a lady dropped her pocketbook and did not know it. What would you do?
33. Suppose a boy ran away with your hat. Tell me one thing you would do. Then what would you do? Why?
34. Now suppose the grocer boy dropped a nice red apple out of the bag. Tell me what you would do. Why?
35. Suppose a big boy said, "Come along, ———, and we will steal some apples." What would you say? Why?
36. Suppose ——— stole a pocketbook and you saw him. Then a man came along and asked you if you stole it. Tell me what you would say? Why?
37. Is March colder or warmer than, or just the same as, June? Which?
    Tell me the names of the cold months.
    Tell me the names of the hot months.
38. What do you get jealous of? What does it mean?
    Tell me one thing that you are afraid of.
39. How many hours is it from breakfast to lunch? What time is breakfast? Lunch? How many hours is it from lunch to dinner? From lunch to dark? Dinner to dark?
40. Stand in front of your chair.
    Stand in back of your chair.
    Stand at the side of your chair.
    Put your chair opposite that chair.

Table II (column 17) shows that the gains of the two groups and their final average scores were almost identical.

ADVANCEMENT IN SOCIAL, EMOTIONAL, MORAL AND OTHER HABITS AND ATTITUDES

From achievement in scholastic information and skills we turn to acquisitions of personal and social attitudes and habits. To determine what attitudes and habits the two teachers considered of high importance a questionnaire was submitted which the teachers filled and to which they added items not mentioned. These results

are not presented, since they were substantially the same. Each teacher attributed great importance to such factors as: habits of studying quietly and efficiently; paying attention; proper obedience; effective coöperation; interest in "carry on" in school work; persistence in undertakings; social adaptability; emotional control; good manners, etc.

Traits such as these are, at present, much more difficult to appraise than those previously considered. As originally planned, such traits were to be gauged in three ways:

1. By the judgments of competent persons unaware of the nature of the experiment, who visited the classes with purposes unknown to the teachers.
2. By the judgments of competent persons, based on detailed stenographic reports of the activities and discussions in the classes on different days.
3. By observation of the pupils in school during the following year.

The first method was not extensively applied. Four competent persons, after visiting each class one day, graded the two on a chart arranged for the purpose. The composite of these judgments, in which ten is the highest and zero the lowest is as follows:

	Opportunistic	Systematic
1. Habits of studying quietly and effectively	6.2	7.1
2. Paying attention during recitations, etc.	4.8	5.4
3. Habits of doing what they are told	5.8	6.3
4. Coöperation in joint enterprises	8.1	7.8
5. Interest in reading, writing, spelling, etc.	6.0	6.3
6. Interest in modeling, painting, drawing	9.1	8.0
7. Interest in constructing things with tools	9.2	8.7
8. Interest in music	9.0	8.5
9. Social and personal manners—courteousness, etc.	8.4	8.0
10. Emotional control—lack of apparent anger, grief, etc.	8.5	9.0
11. Care of desks, materials, etc.	6.3	7.5
12. Enthusiasm in school life in general	9.0	9.0
Average	7.55	7.53

The differences between the groups are very small—unreliably small; in the average of all traits, the classes are identical. Indeed, the inability of the judges to observe differences clearly and to agree

in their observations led the writer to pursue this method no further. Either no real differences existed, or, if they existed, they were too subtle to be observable—or, if observed, they were differently evaluated by the observers.

To provide material for the second type of appraisal, an experienced shorthand reporter recorded all words spoken and all group and individual activities observed during eight complete school days, four in each class, near the end of the year. A sample of the reports follows.

TEACHER A GRADE I May 5, 1924
8:45

[Children remove their wraps and select seat for the day. A president is chosen each day to take care of the activities for the day.

On Mondays children report week-end trips which they think will be of interest to the class instead of having usual Fine Arts recitation.]

ELSPETH (president for the day). Will you all get chairs and come and sit over by the piano? [Children move quickly and quietly, and seat themselves in a circle around the president, who is seated upon the piano stool.]

ELSPETH. Roger.

ROGER. On Friday I went to the country, and I bought this flashlight and this bookmark. (Teacher) asked me to show you the bookmark because you might like to make one like it. And I bought this flashlight from a shop somewheres in the village because at night sometimes our lights are burnt out, and we need to take this.

These are some paper Japanese flowers. You put them in water and they open up into all different flowers. I will get a bowl and some water later and show them to you.

CHARLES. You are in my place, Theodore.

THEODORE. No, I'm not.

CHARLES. Yes, you are.

ELSPETH. Theodore, get you a chair and sit over there.

CHARLES. I will sit on the table. That's just as good.

ELSPETH (strikes chord on piano and children get quiet). I would like for you to stop talking before I call on anybody else.

[Teacher is seated at her desk, and leaves management entirely to president.]

ELSPETH. Buddie.

BUDDIE: Yesterday we went out to 96th Street to see the submarines, and Dad took me out on board ship, and then we went on one of the submarines, and then we went on the tug boat. Then Dad and I walked home down by that stone wall, and Dad, etc.

In judging these records for such traits as those listed above, a rating device was supplied to the judges who appraised each of the eight days' records separately. These were later divided into the four for each class and the records averaged. Data from six judges were combined. These results do not agree precisely in detail with those obtained from judges directly observing the classes, but they show the same average trend—a trend indicating equality of the two classes. The scores vary from day to day; the differences between ratings on different days for the same class are quite as great as the differences between the two classes.

The most promising method of detecting differences in these personal and social traits—by observing their operation in the succeeding school year—was thwarted by the departure of a considerable number from the school. For the same reason, other follow-up studies originally contemplated were given up.

SUMMARY AND DISCUSSION OF RESULTS

The results of the study may be summarized as follows:

1. In the objectives of education outside of the traditional scholastic subjects, in interests in school activities, in social and personal habits, and in attitudes as they were appraised, in general information of varied types,—the groups taught by the Opportunistic and the Modern Systematic methods were substantially equal.

2. Opportunistic teaching, following the special interests of the pupils, resulted in slightly higher achievements in the motor functions, writing (manuscript style), rather certainly, and drawing, less surely.

3. Modern Systematic teaching resulted in considerably greater average achievements in the other school subjects, in arithmetic, spelling, silent and oral reading.

An interesting and significant difference between the outcomes of the two methods appeared in the divergencies in the distribution of abilities in some of the school subjects. In reading, for example, in the Opportunistic group, there was what a standard test in reading of simplest materials designates as "complete failure" in 15 out of 25 cases; whereas in the Modern Systematic group there was none. In the former group there were no exceptionally high achievements; whereas in the latter there were five "reading ages" from 9 to 11 years at the end of this first year.

To ascertain exactly the causes of the failure of children in the Opportunistic group in each school function would, of course, be a

most fruitful supplement to the results already given. In the case of reading and spelling, at least, such of these pupils as remained in the school, and many others, are the subjects of further study, the results of which will be presented in other articles. We shall present here merely a few notes concerning some of the difficulties which a clever teacher following the Opportunistic method has encountered. As appraised by the teacher, the main difficulties in the case of reading—those judged to be of pronounced importance in the production of failure—were of the following sort:

Pupil A. "Home nagging. Constant comparison with 'brilliant little sister.'"

Pupil B. "Unfavorable conditions to growth at home. Clever naughtiness (rather than better things) made much of."

Pupil C. "Living under unfortunate conditions with a mother over-anxious. Poor health; introspective."

Pupil D. "Hovered over by an unbelievably silly mother and aunt."

Pupil F. "Mother does everything for him; dresses him like a little girl—result—babyishness, immaturity."

Pupil G. "Anxious to appear well; self-conscious about books; no real interest yet; leader in sports."

Pupil H. "Immature—loves to play with dolls and pets."

The factors, inhibitive to development in reading, suggested in these comments by a teacher whose sagacity in judging personal traits and relations is well known, are—as I see them—: (1) Inappropriate habits of work, study, self-management in general. These, the teacher seems to believe, should be remedied before the mastery of reading is stressed. (2) Immaturity, whether native or acquired, in certain traits concerned in learning to read. In these cases, the Opportunistic procedure would be to await further growth. (3) Specific inhibitive factors, such as Pupil G., who, yearning to excel in unusual degree, found reading distasteful, possibly because in it, unlike sports, he must play a subordinate rôle. These are, of course, not all of the sources of difficulty, but they are representative.

For these same difficulties, the Systematic teacher could adopt different treatments and defend them, arguing by analogy, with other principles of psychology. For inappropriate habits of work she might defend the selection of reading as an activity in which to supplant the undesirable by more desirable habits, on the assumption that the interest might then be intrinsic. Instead of depending on time alone to remedy immaturity, she might insist that it is better to work more

actively and specifically for maturity by stimulating development through exercise in reading. As a remedy for specific inhibitive factors, such as the one mentioned, she might attempt, through vigorous teaching, to make reading not an activity which results in disclosing an inferiority but one which provides the expression of mastery. The Systematic teacher did adopt the aggressive rather than the watchful waiting policy with results that are only partly known. It has been demonstrated that the Modern Systematic method produced ability to read; whereas the Opportunistic procedure did not in those crucial cases which numbered over half of the group.

If ability to read,—if achievement objectively manifest,—were the only criterion, the Systematic method might lay claim to superiority, since it is in connection with such cases—those who do not learn without help but really need a teacher and teaching—that the question of method achieves any significance. Here lies the crux of the matter; here lie the inadequacies of our data. For the development of interest and enthusiasm in reading and other school activities, for the improvement of initiative, determination, and other volitional traits, for the general improvement of inappropriate habit tendencies, immaturity, and the dispositions toward inhibitive mental adjustments, for the stimulation of healthful mental and temperamental growth in general,—which is superior, the method which achieves the goal of reading ability by aggressive behavior or the one which lingers to secure it by a smoother, even if delayed, route? This question we cannot fully answer. At the most, we may say that, in so far as we were able to secure evidence concerning interest, character development, and the like, the two methods produced no perceptible differences. We should hasten to admit, however, that our evidence is not as detailed and reliable as we desire. We are, therefore, unwilling to make the statement that our data indicate that one method is *better* than the other in any ultimate sense. The study did disclose certain facts, certain pertinent and clear differences. These findings pave the way for further, much needed study. This should take the form of much more extensive and detailed study of all relevant factors in the critical cases of children upon whom the two general methods exert a differentiating effect. In other words, we should ascertain by far more searching analyses the influence of the contrasting methods upon all aspects of the maturing personality.

With the last words, we must sound a word of warning concerning

the possibility of mistaking the nature of the methods studied, especially what we have termed the "Modern Systematic" method. Let it not be thought that this study justifies the rigidly organized, highly rationalized, or logically systematized textbook or classroom series of lesson assignments, study, and recitation. Such a rigid system of teaching was not followed here. Readers, if any there are, who do not understand what is meant and briefly described above as the "modern systematic" method, should study the articles on teaching methods in the Horace Mann School to appear later in the TEACHERS COLLEGE RECORD.

THE TRAINING OF SCIENCE TEACHERS

BY CHARLES W. FINLEY
The Lincoln School of Teachers College

THE question of teacher training for our secondary science teachers is not one of subject matter *or* professional training but one of subject matter *with* professional training.

No doubt a recent article [1] by one of America's leading physicists relating to the training of science teachers for secondary schools will add volume to the long standing controversy between "academically minded" and "professionally minded" educators interested in this subject. Dr. Millikan's ideas are more tempered toward the value of pedagogical courses than are those of Dr. True, who says, "As the true artist must paint, the true poet write poety . . . the true teacher must teach. How should teachers be trained? In my judgment it is best to let them train themselves by teaching. To subject such to courses on how to teach would be not only unnecessary but undesirable." [2] He advocates that science teachers prepare themselves in pursuit of science knowledge, with the idea that the professional side will care for itself.

It is not difficult to find expressions of opposing viewpoint. For example: "My contention is that graduate instruction in our universities does virtually nothing to fit the teacher to teach either science or mathematics in a vital way in our secondary schools. It may even be possible that a highly specialized training of the graduate school, to a certain extent, unfits the student to do this sort of teaching. However that may be, I state a well-known fact when I say that not one in fifty of men and women who take the Doctor's degree in science or in mathematics has the least conception of the problem before him when he begins teaching in a secondary school." (T. M. Balliet) [3]

"The opinion is still prevalent that our elementary teachers need special training, but that the secondary teacher is such by the grace

[1] Millikan, R. A. "The Problem of Science Teaching in the Secondary Schools." *School Science and Mathematics*, XXV: 966-75, 1925. Also, *School and Society*, XXII: 633-39, 1925.
[2] True, R. H. "The Training of High School Teachers in Biology." *Proceedings, Tenth Annual Schoolmen's Week*, pp. 255-59, 1923.
[3] Finley, C. W. *Biology in Secondary Schools and the Training of Biology Teachers.* Bureau of Publications, Teachers College, Columbia University, 1926.

of God and the authority of one's 'alma mater'. Over against this view should be set the demand that the secondary school teacher shall have professional training." (E. E. Brown)

"What we most need is a crop of science teachers with a large fund of constructive imagination, who have been trained by college and university professors who bow somewhat less reverently before the shrine of research and realize rather that the kingdom of heaven can be found in the lives of growing boys and girls." (J. E. Peabody)

"The prospective teacher needs, first of all, to gain a working conception of the correlative nature of scholarship and method. A true synthesis is to be found in a masterly control of subject matter in the process of education. Three elements, at least, are involved in adequate teaching; they are, gripping boys and girls understandingly, using subject matter with a functional outlook, and gripping ways and means of directing activity in a productive manner. The *whats* (subject matter) to teach must include the complicated and variable *hows* (method) of teaching. Any mechanical separation between academic scholarship and professional training courses must be bridged. The notion that one first acquires subject matter—amasses information, and then acquires methods of teaching it, is held to be invalid, and an unfortunate separation." (H. L. Miller)

"It is still believed by otherwise well-informed persons that any scholar is *ipso facto* a teacher, or, at least, that he can easily become a teacher—a good one—by practice only. (It would be more correct to say by floundering!) This view is held, with a conspicuous disregard for the testimony of experience, by many college professors. Inasmuch as colleges and universities are the source of supply of the great majority of our high school teachers, the persistence of this error must be reckoned with when we seek to secure proper training for high school teachers . . . Teaching power like scholarship must be acquired with painstaking care. . . . The "born" teacher . . . gains enormously by the careful study of every detail of his art or profession." (P. H. Hanus)

There is general agreement among educators in both "academic" and "professional" groups that a science teacher, or any other teacher, should be well informed in the subject matter of his chosen field. The real issue is whether in addition to or along with his pursuit of subject matter he shall also do "professional" work. The professionally minded educators do not decry subject-matter prepara-

tion but insist that, in addition to it, the teacher shall pursue courses which will better prepare him to teach this subject matter to high school students in a more efficient manner.

Dr. Millikan's "learning by doing" is surely as applicable to the acquisition of teaching technique and skills as it is to the acquisition of subject matter and attainment of the scientific method. The teacher in training needs to learn the technique of teaching by *doing* just as the research worker in training needs to learn the technique of research by *doing*. Practice in classroom teaching under guidance of master teachers bears the same relation to teacher training as laboratory practice and research under competent guidance do to the training for research. It is just as scholarly—no more, no less—for the teacher to know and study the problems of teaching as it is for the specialist to know and study the problems of research.

The fact that knowledge of subject matter alone is not sufficient to insure good teaching is well shown by signal failures as teachers of some noted scientists in science departments of our higher institutions. Teaching, to many of these men, is but a waste of time and an interference with research work. The welfare of the nation and of posterity depends, to a large measure, on the time consuming, carefully planned, and intelligently applied research work of these specialists. It is neither a just nor an intelligent demand that these men train teachers. Their task is to do research work and train research workers.

In addition to acquisition of subject matter and participation in teaching there are many other topics, devices, skills and considerations which should be brought to the attention of the prospective teacher. The question of subject matter for high school courses in science is an important one. Shall the organization of subject matter in introductory courses differ from that of later courses? What are the arguments for and against general science as an introductory course? Should the aims and purposes of introductory and advanced courses differ? Should there be any attempt to relate science courses to other courses in the school, such as industrial arts, household arts, mathematics and others? What has been the history of the changes in aims and purposes of science teaching in the high school? What disposition shall be made by the teacher of some of the state requirements regarding topics to be taught in some of the subjects—alcohol, narcotics, tobacco, evolution and others?

There are three types of laboratory procedure applicable to science

work in the high school: individual work, group work, and teacher and pupil demonstration. Which type of procedure is best fitted for work in general science, botany, physics, and the rest? Shall the same type of laboratory procedure be used in science classes, in academic and commercial groups of students? What shall be the relation of laboratory and class work? The laboratory notebook with its problems of notes, labellings, drawings, diagrams and the great amount of time required to properly supervise and correct, well merits consideration of students who expect to teach science. There are many other topics concerning the laboratory worthy of consideration. A few such are: collecting and preserving of materials, purchase of supplies, making of microscopic and lantern slides, operation of projecting apparatus, and the like.

Literature and references best fitted to the high school student should receive the attention of the prospective science teacher. There is a wealth of such material in science. In addition to the usual books and magazines there are national and state bulletins and numerous pamphlets by commercial and industrial companies, educational, and philanthropic organizations. The *Research Narratives* of the United Engineering Society; *Chemistry in Industry,* by The Chemical Foundation, Inc.; *Birds of Massachusetts and New England,* by the Massachusetts Department of Agriculture, and the numerous health pamphlets by the Metropolitan Life Insurance Company are cases in point. An intelligent use of these references will greatly enhance and vivify the high school science courses.

No doubt the antagonism of some research specialists to professional courses dates back to a knowledge of types of such courses a few years ago. Many so-called "method" or "teachers" courses of this period comprised a few weeks of cramming in the various subjects in order to pass teachers' examinations and thereby gain the coveted certificate to teach. Little or no attention was given in these courses to a consideration of really professional matters. The effect of such practice could but result in sending into the field narrow, unscholarly, and poorly prepared teachers. We must not forget that even these get-teacher-quick methods failed to prevent teacher shortage. Hence some justification and credit should be given to these courses. But this is beside the point.

The men most interested in the professional training of high school teachers are as zealous in their advocacy of scholarship as are those in the liberal arts field. Surely the growing youth of the nation

is a more valuable asset than any of the commercial commodities which to-day command such a large amount of scientific research. The best men obtainable are none too good for science teachers in our high schools. May salaries, teaching schedules, and tenure improve to the point where science teaching will be as appealing and as respectable as subject matter research! If, however, the universities face a problem in coping with industry in securing good men, what chance has the secondary school? "The spirit of scientific research has moved into our universities, and from the universities has moved into our industrial organizations. Industrial research is making bigger and bigger demands upon the universities for highly trained scientific research men; the demand is larger than the supply, and because the industries can pay much higher salaries than the universities can, much difficulty has been experienced in inducing bright and promising young scientists to pursue the academic career of a teacher. The quality of the scientific teacher in the university is temporarily deteriorating, that of the industrial research scientist is steadily rising; . . ."[4]

The problem of training teachers for science work in our high schools of to-day is further complicated because of the tasks imposed on these teachers. Were the teachers trained in chemistry or physics, or biology, assigned to the teaching of that subject and that alone, the problem of teacher-training would be much simplified. The fact that more than half the teachers in science in our high schools are teaching three or more different subjects, acts as a determent to idealism and, no doubt, to acceptable teaching of these subjects. A résumé of several studies of science teachers and their tasks is found in the accompanying table:

SCIENCE TEACHERS AND THE NUMBER OF SUBJECTS THEY TEACH

Investigator	Number of Teachers Reported	Per Cents of Teachers Teaching Given Number of Subjects						
		1	2	3	4	5	6	6+
Caldwell	48	6	31	40	19	4	..	..
Cummings	31	22	26	22	26	3	..	..
Downing	70	1	26	30	21	10	10	1
Finley	129	17	41	25	15	2	..	..
Hutson	270	8	26	31	23	8	3	1
Foster	144	17	28	22	21	10	1	..
Montgomery	61	8	30	34	18	10	..	..

[4] Pupin, Michael. *From Immigrant to Inventor.* Scribners, 1923.

From these studies we are led to conclude that approximately ten per cent of our science teachers teach but a single subject in the high school; thirty per cent, two subjects; thirty per cent, three subjects; twenty per cent, four subjects; and ten per cent, five subjects.

Some of the studies reported the subject-combinations of the teachers investigated. As would be surmised, the list includes all the subjects expected to be found in the high school curriculum. In the main, the teaching schedule is a combination of science subjects. If these science teachers taught nothing but science subjects, more than half of them, as is shown by the investigations, would need preparation in three or more sciences in order to meet the tasks confronting them. It is not the intention of the writer to champion this state of affairs. Such a condition is deplorable and can only result in a corps of teachers who are acceptably prepared neither in subject matter nor in professional aspects of the subjects they are teaching.

The question of teacher training for our secondary science teachers is not one of subject matter *or* professional training but one of subject matter *with* professional training. Best results will obtain when our teachers have the optimum amounts of each. If the liberal arts college is desirous of having its graduates enter the teaching field, it should provide practice teaching facilities and professional courses for those of its students who intend to teach. Likewise, teachers colleges should so organize their work that graduates from these schools are well grounded in subject matter. Each type of institution, then, should send into the field teachers well trained in the subject matter and professional aspects of the subject he intends to teach.

NEEDED RESEARCH IN THE FIELD OF STATE AID

BY PAUL R. MORT
Assistant Professor of Education, Teachers College

THE Educational Finance Inquiry, in demonstrating that the use of state aid to reward effort is incompatible with its use for the equalization of educational opportunity, prepared the way for the clarification of a number of problems that were previously obscured by the attempts to use state funds to obtain two mutually exclusive results.[1] In the last two years, at Teachers College alone, there have been four studies in this field.[2] Much that previously was the subject of vague conjecture has been reduced to simple arithmetic. Techniques are now available that make it possible to set up a system of state aid for equalizing educational opportunity which promises to require only comparatively slight changes to meet the demands of further research. If, as it now appears, the equalization of educational opportunity proves in the future to be the sole use of state funds for support of public schools, we are well on the way toward an adequate interpretation of the problem of state financing of public schools. There is need, however, for further research into the implications of the findings of the Educational Finance Inquiry mentioned above, along lines which are indicated in this article. There is also need for certain refinements in the technique of equalizing educational opportunity.

Do the findings of the Educational Finance Inquiry indicate that to determine the proper purpose of state aid requires only a choice between equalization of educational opportunity and reward for effort? If so, there would seem to be no question as to which should survive. The equalization of educational opportunity is a commonly accepted function of the state which cannot be exercised without the

[1] Strayer, G. D. and Haig, R. M. *The Financing of Education in the State of New York.* Educational Finance Inquiry, Vol. I, 1923.

[2] Reference here is to *Equalization of the Financial Burden of Education Among Counties in North Carolina,* by F. W. Morrison (1925); *State Responsibility for the Support of Education in Georgia,* by G. G. Singleton (1925); *The Measurement of Educational Need,* by the writer of this article (1924); and "State Aid for the Public Schools in the State of New York," prepared for the Special Joint Committee on Taxation and Retrenchment of the Legislature of the State of New York, by the writer with cooperation and advice of George D. Strayer, J. R. McGaughy and Robert M. Haig; pp. 195-250 of the *Report of the Special Joint Committee on Taxation and Retrenchment* (1925).

use of state aid. The reward for effort, on the other hand, presumably is only one of the possible means for exercising another recognized function of the state, the encouragement of progress in localities. Obviously, granted that the function of encouraging progress can be properly exercised without rewarding local effort by granting more state support to the progressive communities, the conclusion that state funds for school support shall be used solely for equalizing educational opportunity is sound.

The equalization of burden is given first place only because it cannot be exercised without state aid; whereas, presumably, encouraging progress is not solely dependent upon the use of state aid. If it were demonstrated that the equalization of the burden of the state's program would result in wasting time educationally, or if it were demonstrated that the use of payment for effort promised better educational results in the long run, many people would hold that payment for effort would be justified regardless of the inequality in burden it might introduce. There would be very few who would not take this position, provided the inequality of burden introduced was reasonably small—let us say, comparable to the inequality of burden inherent in the taxing system.

Can it be granted that progress can be properly encouraged without rewarding effort? Are the other agencies for encouraging progress adequate? Does use of state funds for bringing about complete equalization of the burden of a minimum program, involved in equalizing educational opportunity with no reward for effort, promise as great educational progress as a use of part of the funds for rewarding effort, with the resulting incomplete equalization of burden? The answers to these questions have a direct bearing upon the policies to be adopted for controlling payment for effort. Should payment for effort be continued as equalization is improved? Should it be discontinued to make possible complete equalization of burden? These questions can be partly answered through a comparison of the relative efficacy of means that have been used to bring about progress, and experimentation with methods tried in other activities or entirely new. Among other things this will require that the various methods of rewarding effort be evaluated with respect to their influence upon educational progress. It will require the evaluation of plans not requiring state aid which have brought about similar results in different states. It will require the evaluation of the equalization of burden as a factor in educational progress.

There are enough materials in the forty-eight states to make possible significant studies along these lines. States that have made the rewarding of effort a primary use of state aid should provide ample material for determining the conditions under which the various plans of rewarding effort are the most effective and their effectiveness in encouraging educational progress. For the question as to whether as good or better results might have been obtained without the use of state aid, the investigator will likewise find a rich field in the variety of ways that various educational steps have been taken in different states. There is a less rich field for the effects toward encouraging progress of different degrees of equalizing burden, but it is by no means a barren one. There are states that are doing practically nothing with respect to equalization of burden. There are half a dozen states that have been doing considerable for a quarter of a century or more. There are such examples as Delaware and Maryland that have been operating for a time well up on the scale. There are county units with local school boards within the county with the right to go beyond the county's program, which reproduce for a small unit the ideal conditions for a state as a whole with respect to equalization of burden. Some conclusions may well be drawn from the experience of these units.

Failure to have immediate answers to these questions should not affect the progress toward more adequate equalization of educational opportunity for a few years at least. There is no state that does not have a considerable distance to go along this line, and probably even the most ardent exponents of payment for effort would not object to the further expansion of equalization in any state. But the present indications from the expansion of equalization funds in many states and the attempts of such states as Maryland and New York to carry out, in so far as possible, the implications of equalization indicate that it will not be long before some state, in its actual practice, will have reached the stage of conflict.

Within the field of equalization there are four problems in which clarification is needed. Although, in the writer's opinion, at least, none of these will make any marked difference in procedure as it can now be defined, at least two of them now constitute points of attack for those opposed to the complete application of the principle of equalization of educational opportunity. The solutions to three of them promise to be comparatively simple.

The most difficult of solution is the determination of what con-

stitutes a satisfactory minimum program for the equalization of which the state should accept responsibility. Does the principle of equalization of educational opportunity in any way define a definite minimum, or is the minimum a changing standard set by the progress of localities? Is there any differentiation as between the interests of the state and the interests of the locality that divides the responsibility of the state and locality for the support of the public school program? The failure to obtain a solution to this problem will be a greater handicap to the research workers interested in defining the demands of an educational program than to the administrator; for here again the minimum program upon which we can all agree is far ahead of the actual minimum. We can progress educationally to a remarkable extent before we may hope to seriously propose a minimum program beyond the point as to the desirability for which we can obtain general agreement without a fundamental solution.

A second problem in the field of equalization of educational opportunity is the development of an adequate index for measuring the cost of transportation of pupils. In some communities transportation of pupils is necessary in order that the state's minimum program may be offered. The costs of such transportation are legitimate responsibilities of the state as a whole. They should be considered as a part of the cost of the minimum program. Up to this time, however, no adequate index of transportation cost has been developed. States that are seriously attempting to assume the responsibility for a satisfactory minimum program are handicapped by the lack of such an index.

The development of an index for the necessary cost of transportation appears to be the type of problem that lends itself to direct solution. A great many of the factors, such as length of haul and number of pupils, will be common to all situations. An index developed upon such factors may be corrected for disturbing local factors which are beyond the control of the locality.

A third problem in this field is the working out of any correction to the measure of educational need that may be demanded by differences among communities in cost of living. This is a problem that has been clouded by the fact that communities with a high cost of living also employ better trained teachers than other communities; and a comparison of salaries paid—though strangely enough allowed to affect state minimum salary legislation out of all proportion to the differences in training of teachers—does not yield a fair measure of

the relative cost that would have to be met in the actual employment of teachers of the minimum program type. Yet it is this minimum teacher whose cost is to be considered in the equalization of educational opportunity. Prussia, with a problem somewhat similar, has disregarded this "open market" argument in determining the salaries of supposedly equally competent teachers for posts in large and small communities. She has taken as criteria for determining wage (1) an equal standard of living and (2) an equal saving beyond this. Prussia has the problem of measuring the cost of equivalent teaching ability. In that respect her problem has been the same as the one we are facing in an attempt to measure the cost for salaries of teachers with the minimum preparation and ability permitted by the minimum program. This may give us a lead for the solution to this vexing question.

Early solution of this problem is desirable, because it appears to be a greater issue than it really is. Cities, thinking in terms of the total salaries paid teachers with qualifications in many cases much in excess of the minimum, think of the correction as being much greater than it would amount to on the total of the salaries that would be paid minimum teachers—which is the real base to be corrected. Of course, if, as it has been contended, the cost of teachers with minimum qualifications on the open market proves to be the tenable criterion, the correction might work to lower the allotments to cities that are particularly attractive to teachers for one reason or another.

The final question to which attention is called is the mooted question of equalizing the burden for capital outlay. There are those who advance convincing arguments for leaving capital outlay to the localities. Yet it is a fact that, to some few communities in many states at least, the provision of adequate housing by local support alone would not be a mere 10 per cent in addition to the equalized burden carried to support its current expenditure, but as much as 50 per cent or 75 per cent. There are instances in states in which even comparatively large local units exist where this figure goes as high as 100 per cent. In the face of this condition, states are providing state aid for buildings. It would seem obvious, then, that a study is needed which will care for the various viewpoints on this subject, reconcile them with the above conditions, and, if it proves needed, work out the technique for distributing the burden of a satisfactory minimum of capital outlay.

To summarize, the problems in state aid presented are as follows:

1. The investigation of the demands on the state fiscal program of the principle that the state shall encourage progress of education in the localities.
2. The interpretation of a satisfactory minimum educational offering in terms of the unit cost it involves.
3. The development of an index for measuring the burden involved in transporting pupils.
4. The investigation of the effect which the cost of living should have on a true measure of educational need.
5. The investigation of the part to be played in an equalization program by capital outlay.

STUDY HABITS OF HIGH SCHOOL PUPILS

As Shown by Close Observation of Contrasted Groups

BY PERCIVAL M. SYMONDS
Assistant Professor of Education, Teachers College

THIS paper presents the results of about thirty hours of close observation of the study and recitation conduct of ten boys in the third form (ninth grade) of the Horace Mann School for Boys. The boys who were observed were carefully selected in the following manner. The average mid-term mark of each boy in the third form was found and turned into S.D. units of the group. The Terman Group Test of Mental Ability was given to the third form and the scores turned into S.D. units of the group. The difference between the achievement S.D. units and the intelligence S.D. units was found for each boy, and this difference was used as a measure of his studiousness. It affords a rough measure of the degree to which a boy succeeds in school in relation to his mental ability (These differences will subsequently be referred to as S.D. differences.) The ten boys studied were those with the five highest S.D. differences and the five lowest S.D. differences in the third form, the intention being to get boys who studied well and boys who studied poorly. The averages for the two sets of five boys each are presented here:

	Studious Group	Non-Studious Group
Age	14.0	14.0
Score on Terman Group Test of Mental Ability	163	159
Average Mid-Year Marks	85.7	68.6
Mark in English	88	70
Mark in Algebra	87	71
Mark in History	81	61
Mark in Latin	86	64
Mark in Science	86	78
Intelligence S.D. Value	.26	.09
Achievement S.D. Value	1.19	− 1.48
S.D. Difference	.93	− 1.57

These figures show that the groups are alike in age and general

ability, but one group does very much better in school than the other.

My general plan of observation was to follow one boy from one classroom to another or to study hall during a morning or afternoon. A few boys were followed through the play period, but conduct during this period seemed to be unfruitful for the purpose I had in mind. Careful and undivided attention was given to the behavior of a single boy during a period, in order to follow, as far as possible, through the connected experiences of the day. Every act of the boy was entered in a notebook. The school is accustomed to visitors, and my frequent appearance in the same classrooms was soon apparently unnoticed. By affecting disinterest in what was going on, I was able to follow very closely the behavior of the particular boy I was studying.

First, I shall make some general observations as to the result of my study. Until one sits down and watches boys study, one does not realize how simple a process study is for ninth grade boys. In general, they do precisely what they are told and no more; and, in general, they are told to do only very simple things. There are so many sentences to translate into Latin, so many examples to do in algebra, so many pages to read in history, a composition to write in English. And study for these boys consists of the direct and straightforward attack on the assignments, with the many interruptions and distractions that are found in large study halls.

In general, good and poor students are not totally different in their habits. Good students are a little more industrious, have a little more skill in the handling of materials, and are a little more clever in the attack on a problem. Good students tend to be alike in habits that relate to study; whereas there is no type of poor student. There are a great many links in the chain of study and a weak link anywhere along the chain will make a poor student—it may be his attitude toward school work, it may be his lack of skill, or it may be one or more bad habits.

I shall take up the specific points under the following heads: (1) clerical abilities; (2) reading abilities; (3) abilities with materials; (4) problem-solving; (5) habits; (6) attention; (7) motivation; and (8) memorizing.

CLERICAL ABILITIES

There are a number of clerical abilities which are tools of study in the secondary school. The following may be listed:

Ability to find place with accuracy and speed in an alphabetical list.
Ability to find pages quickly.
Ability to copy numbers correctly.
Ability to detect slight errors or differences between words or numbers.

The group was given the Ruggles Diagnostic Clerical Test, which contains excellent tests of some of these clerical abilities. The results were as follows:

	Speed		Accuracy	
	Studious	Non-Studious	Studious	Non-Studious
1. Comparing names and numbers for small differences	52	56	48	48
2. Estimating half of a number	81	101	78	93
3. Filing alphabetically	39	32	37	28
4. Classification	78	81	70	75
5. Copying numbers	60	48	59	46
6. Fundamentals of arithmetic	19	12	17	10

This shows that the studious group is not consistently superior to the non-studious group in the abilities measured by the Ruggles test. In ability to file alphabetically, in copying numbers, and in the fundamentals of arithmetic, the studious group is superior; while in estimating half of a number the non-studious group is superior. Facility in use of the vocabulary was the skill in which the studious group was observed to be superior to the non-studious group. It is not implied that the figures from the above test demonstrate that studious pupils in general are superior or inferior to non-studious pupils; only that this particular group of studious pupils is superior or inferior to this group of non-studious pupils. The figures corroborate observation only partially. It is probably true that the studious boys used what abilities they have more effectively than the non-studious boys.

READING ABILITIES

Reading ability is recognized as an important, if not a central, factor in study. This is true not only because the printed page is so often the material of study, but because the processes and operations involved in reading are the very essence of study. Examples of specific abilities are:

Ability to answer questions, the answers to which are found in the material.
Ability to select a test title for a paragraph.

Ability to find the sentence in a paragraph which answers a given question.
Ability to tell what question a paragraph answers.
Ability to find word or phrase that limits or qualifies a statement.
Ability to outline.
Ability to skim.
Ability to recognize inconsistencies.
Ability to follow directions.
Ability to anticipate meanings.
Ability to recognize equivalent ideas differently expressed.
Ability to summarize.
Ability to locate material.
Ability to read a graph.
Ability to read an algebraic expression.
Ability to read a geometric figure.
Ability to read a table.
Ability to read a diagram.
Ability to follow the description of a picture or a diagram.
Ability to make use of cross references.
Ability to read a map.
Ability to read a timetable.

None of these were evident to observation and could be ascertained only through testing. Although tests are available for several of these abilities, they were not given as a part of the program. The groups, however, were observed to differ as to speed of reading, and a test in speed of reading was given. The test selected was the I.E.R. Reading—Easy 3. It is really a directions test, consisting of fifty-four statements and directions, of which the following is typical:

> 46. If it is true that the roof of a house is always made of tin, draw a line under the first two squares. If not, draw a line over the last square. □ □ □ □

The results showed that, on an average, the studious group finished the fifty-four exercises in 429 minutes; whereas the non-studious group required, on the average, 510 minutes. This corroborates the observation.

ABILITIES WITH MATERIALS

No differences were noted between the groups in abilities to handle materials. It is probable that these abilities are not highly correlated with ability to study successfully. However, the following abilities may be noted, for without them there is undoubtedly some handicap to study:

Ability to use index effectively.
Ability to use table of contents effectively.
Ability to use footnotes.
Ability to use an appendix.
Ability to use a glossary.
Ability to use the dictionary.

ABILITY WITH THE TECHNIQUE OF PROBLEM-SOLVING

There were striking and noticeable differences between the groups in their methods of problem-solving. Some boys of the studious group, in trying an example in algebra, would try many possibilities until the right way forced its way through; the non-studious boys would easily give up after a first unsuccessful attempt. The studious boys were clearly superior in their habits of correcting mistakes. In class, they would voluntarily correct mistakes on their papers and in the recitation of other boys, whereas the non-studious boys would, on the whole, let a mistake pass uncorrected. The studious boys had much better habits of checking their results and in comparing their results with standards. In foreign language composition, for instance, the studious boys, through skillful use of grammatical synopses or their memory, checked nearly every form; whereas the non-studious boys would put down a form on their papers and let it go.

Skill in the process of reasoning seems to be highly specialized according to the task and the material. Different specific habits are needed in comprehending a problem in geometry or in civics. Following is a list of skills essential in the study of demonstrative geometry:

Ability to tell what is given.
Ability to tell what is to be proved.
Ability to draw the figure.
Ability to label the figure.
Ability to draw promising auxiliary construction lines in a figure.
Ability to recall pertinent information regarding a situation (figure).
Ability to recognize an element (line, point, angle, etc.) as a common factor in several different relationships.
Ability to recall facts needed that may be used in proving various types of relationships.
Ability to select combinations that involve known and desired outcomes.
Etc.

These same abilities are also present in problem-solving in other fields, but the subject matter may be so different as to make the

similarity unrecognizable. For instance, ability to draw and label a figure is unique to geometry. In civics similar devices are not needed to the same extent in making concrete and visual the nature of the problem. In civics, on the other hand, much more skill and technique is necessary in collecting and organizing pertinent facts. It is for such reasons as this that reasoning is so specific and that technique of problem-solving must be taught in every separate field.

HABITS

Habits as a basis for effective study have been overemphasized. But there are several which my observation showed to be a factor distinguishing the two groups, and hence may be indicative of good study.

1. The good students had the habit of inquiry. On the whole, they were not willing to let pass unanswered or unsolved questions which arose in their study or in class. The poor students, on the other hand, did not seem to suffer from unanswered questions. Perhaps this was because the questions did not become real and vital for them. But it also seemed probable that they simply did not care enough to wish for an answer or a solution.

2. It is commonly stated that one of the habits of good study is getting started "as soon as the bell rings," but I could not distinguish any difference in this between the two groups. Quite frequently one of the studious boys would spend the first five or ten minutes of a study period in listlessly turning the pages of the *Literary Digest* or in reading a letter. A non-studious boy might start working immediately. But there was a distinct difference in the manner in which they stopped work at the close of the period. The non-studious boy would stop work with the bell, even in the middle of a sentence or with a problem unsolved. Usually he was finished with his work before the end of the period. The studious boy finished what he was doing before quitting. He would finish the page or chapter he was reading; or he would try to finish the problem on which he was working, even though he was left alone in the room.

3. The studious boy would anticipate answers to questions—the non-studious boy would wait until he was called on.

4. The studious boy had his work in on time—presumably taking time enough to do it. The non-studious boy frequently was late with work and willingly offered excuses. Apparently, the non-studious boy allots a certain time for his work, and, if the work is not

accomplished in that time, it is not done. This means that, in general, studious boys do their work soon after it is assigned and non-studious boys as late as possible before it is due,—although this is by no means a general rule.

5. The studious boy was generally industrious during the study hour; the non-studious boy may or may not have been.

6. The studious boy liked to do things himself; the non-studious boy liked to have things done for him. If it was necessary to have a special computation done by members of the class, the studious boys proceeded to do it; the non-studious boys waited for the answer to be announced. Or, if it was a special translation or rule of syntax that had to be looked up, the studious boys looked it up, and the non-studious boys waited for the result. I noticed somewhat the same thing during the play period. The studious boys would be the ones who chased the flies or backed up the catcher; the non-studious boys tended to show what is facetiously called "executive ability," by letting someone else do these things.

7. The studious boys planned their work—some more than others. One boy that I observed was extremely orderly in his work and evidently took much pride in laying it out in advance. The non-studious boys, as a rule, seemed impelled by the exigencies of approaching class periods. Often they would have to inquire from their neighbors what the assignment was.

8. Studious boys enjoyed doing new things—they seemed eager to take up the next mood in Latin, to study a new short story, or to take a new case in factoring. The non-studious boy seemed to shrink from the novel and unfamiliar in study.

ATTENTION

One set of habits seems of such particular importance that I shall treat them in a separate section. Concentration, or rather habits of concentration, are stressed by all writers on study as of prime importance. I watched the boys particularly for differences in their habits of attention. So far as my observation went, I could not tell that one group concentrated or was able to concentrate better than the other. Non-studious boys did not seem to notice my entry or exit or movements about the classroom more than studious boys. Non-studious boys seemed fully as able to work continuously on a task as their more studious classmates. Studious boys were as fully aware of and disturbed by distractions in the study hall as any others. I

do not deny that ability to ignore distracting stimuli and ability to work continuously are not important abilities for the student. These two groups did not show significant observable differences in these respects.

But, in the ability to shift the attention from one thing to another, the studious group clearly showed superiority. This, in fact, was perhaps the most outstanding of any of the differences between the groups. The studious boy, almost without exception, reacted as follows: On the presentation of a question to the class the boy would be keenly at attention. If possible, he would anticipate the answer and then lapse into inattention, or rather, permit his attention to turn to something else. But the anticipated answer was always near the threshold, ready to be given if the boy were called upon or if another boy were to give a wrong answer. This involved a rapid shifting back and forth of the attention. The characteristic procedure of the non-studious boy was to sit stolidly in his seat, apparently with attention on nothing, and only come to life when called upon. One non-studious boy had a pseudo habit of shifting his attention. Like the studious boy he would propound to himself the answer to a question when given, but it would often be a superficial or partial answer. He would let his attention lapse until he was called upon and then give his inadequate answer. The studious boy would not, as a rule, let his attention go until he found what was to him an entirely satisfactory answer. Another difference between boys in the two groups was their response after reciting. Studious boys, as a rule, quickly let their attention turn to something else. Non-studious boys seemed to be called to life by being called upon to recite, and apparently held their attention to the sequence of the lesson for some time before turning it elsewhere.

This same shiftiness or facility of attention showed itself in the study hall among the studious boys. Studious boys were extremely nimble with materials. They would shift quickly to the vocabulary in language translation; or to the syntax synopsis in language composition. They would try algebra problems on scratch paper, or erase frequently when they seemed to be running into a blind alley. I really believe that studious boys spent more time in looking into space or out of the window than non-studious boys. But every time they came back to their work, they made new advance on what they were doing. The typical response of the non-studious boy is that of being burrowed deep in a book or working industriously at a paper. I

have watched these boys while they seemed immersed in a book, and judging from the time it took to turn a page it is evident that their thoughts were far away. This might be called a successful adaptation. The supervisor of the study hall only too often measures study by close application. Accordingly, the boy who is industrious according to surface appearances but really far away in thought and interest goes unreprimanded; whereas the boy who shows restless movement among his materials or is apparently in reverie is severely called to task. Of course, one must distinguish between mere nervous handling of materials and the active inquiry into a problem.

In order to determine whether there was a real difference in this ability to shift the attention, I gave the following tests. I had the boys add columns of ten digits while I read to them a story. They started and stopped adding when I started and stopped reading. After the reading, they answered questions on the reading. I used for the reading and questions on the reading Test 10 of the Otis Advanced Intelligence Examination. Then they tried adding for the same length of time without distraction, and then listened to another story and answered questions about it without distraction. The results are as follows:

	Without Distraction Adding			With Distraction Adding		
	Speed	Accuracy	Memory	Speed	Accuracy	Memory
Studious Boys	13	11	22	8	5	19
Non-Studious Boys	10	9	24	5	3	19

The results are not conclusive. Apparently, there is no difference between the groups in working without distraction and in working where rapid shifts of attention are necessary. This may discredit my observation, but I prefer to interpret the results as showing that the groups have equal ability in shifting the attention but that the studious group is much more skillful—knowing when and how to use this ability.[1]

MOTIVATION

Motivation is as hard to observe as it is to test. One can judge motivation only by noting its effects. But it was plainly evident that

[1] Dr. A. I. Gates suggests that this test may be unfair, inasmuch as it presents a situation quite unlike any that is met in children's school work. Test 5 of the Ruggles Diagnostic Clerical Test—Fundamentals of Arithmetic—is also a test of ability to shift the attention quickly from one mental set to another. The exercises are arranged so that one goes in succession from addition to subtraction, to multiplication, to division. In this test the studious group was distinctly superior to the non-studious group. But this difference quite probably was also a difference in arithmetical ability.

there was great difference in the attitude with which the boys of the two groups approached their school work. The studious boys showed evidence of caring greatly as to their success in school; the non-studious boys apparently cared little, as shown by facial expression, alacrity of movement, and the like. Of course, the "don't care" of the latter group might have been more seeming than real. A little success might make much difference. On inquiry among the teachers of the school, I found that there was considerable difference in the homes of the boys. One of the studious boys comes from a home where the mother does all that is possible to see that the home is efficient. The children of the home are encouraged to succeed in school, and interest is always shown in the events of the school day. Through the years this boy has learned to cherish the prizes of school success highly. Another studious boy has an older brother who is a school leader. He, therefore, has something to live up to. The same incentives that stir the older brother stir him, and he feels satisfaction in the same kind of successes when they come. One of the boys in the non-studious group is the son of one of New York's famous comedians. The home life lacks continuity and seriousness. School is not made to seem worthwhile at home. If the boy is to be out in the evening, lessons do not count—what difference does it make, anyway, whether they are done for the next day? To this boy the applause of the audience has been made one of the prizes of life; he is much more pleased if he makes the class laugh in the schoolroom than if he wins scholastic success. Motivation would seem to be a large factor in school success.

I should say that much of the motivation that causes some boys to strive for school success and others to ignore it is formed outside of school, usually at home. What can the school do to overcome outside influences? One thing that the school can do is to provide some activity in which the boy can be successful and see that he is given every opportunity to be successful. Failure is very damaging to good intentions: it may spur on for a short time to increased activity, but eventually it crushes any ambition. A second thing that the school can do is to make the results of good study more desirable. Athletics encourage and maintain high morale by all sorts of stimuli. Usually success in athletics in a school is made to seem highly desirable, often by fictitious and artificial means. A similar measure of worthwhileness could also be made to attach to scholastic success by advertising it a little more efficiently.

MEMORIZING

As a factor in efficient study formal memorizing has been very much overemphasized. Only very rarely did I observe a boy consciously memorizing, and then, it seemed, only for fleeting instants. Paradigms are memorized and rules of syntax are learned in all foreign languages. The few times I observed memorizing, there was lip movement. Usually there was a rapid opening and shutting of the book, as though it were a process of visualizing the page. Again, there would seem to be an attempt to build a logical structure for the memorization, as evidenced by a nodding of the head or a counting on the fingers. The memorizing process was used so seldom that no generalization can be made between the good and poor students.

Far more important than efficiency in memorizing would seem to be knowing what and when to memorize. The few students who memorized did so at the very end of a study period, in an attempt to arrange and fix a few main principles as key points in the lesson. This memorizing apparently does not take the form of memorizing complete statements as "The indirect object of a verb is in the dative case," but rather a dash at the essentials so that the memorizing is "indirect object—dative." Or, if one is trying to memorize the formula for solving the quadratic, $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$, the practice is to try to write down the formula, referring to the book for help. If the learning is not accomplished the first day, it is fixed the next day by concentrating on certain doubtful items so that the image stands out as $x = \frac{-}{2} \quad - 4ac$, those being perhaps the items that need additional fixation. The learning as practiced by these boys seems to be acquired in the process of doing, and formal memorizing is merely used to fix or refresh certain doubtful details, or to fix an outline or summary to use in filling in details.

SUMMARY

1. Of the methods for investigating study habits of high school pupils, testing seems the most promising. It is the most analytic, but it is costly in time and labor. The results when obtained, however, rest on a secure basis. Next to testing, controlled observation seems to be the method that gives the most fruitful results. Questionnaire methods are faulty and inadequate.

2. The results of previous investigations show that rules and handbooks on "How to Study" have erred in the emphasis given to certain formal factors in the study process.

3. Two groups of ten boys, five good students and five poor students, were singled out for observation, and significant differences in their methods of study were noted. An attempt was made to corroborate these differences in the groups by tests.

With such narrow sampling none of the observations noted in this study can be considered as demonstrations of real differences. The writer is well enough versed in statistical methods to make no such claim. The hints thrown out, however, are worthy of further investigation. In this sense this paper can claim to be nothing more than a statement of the possibilities of future research.

One thing seems definite. Study for high school boys, being the simple process that it is, throws the burden squarely back on the teacher. High school boys do exactly what is required of them—they go directly to those tasks and no others. Consequently, in the *assignment is the key to study habits.* The assignment determines the nature and content of the study. The assignment should more and more take the form of practical exercises or "the job"; it should not be a mere covering of so much material.

THE OFFICE OF RESEARCH IN HOME ECONOMICS EDUCATION

TEACHERS COLLEGE, COLUMBIA UNIVERSITY

THE office of research in Home Economics education was instituted at Teachers College in September, 1924. Its tentative program was built on the basis of what seemed to be an insistent demand from the school field. During 1920-21 a committee of the staff of Teachers College, Pratt Institute, the Commonwealth School, and the New York public schools, with Professor Cooley of Teachers College as chairman, met "to recognize and if possible crystallize some of the problems in household arts educational research." Dr. Bonser presented to this group a "proposed survey of standards of family life in United States." This was studied and worked over, and the next year there were outlined plans for "an analysis of the fundamental needs of American home life, a study of homemaking activities and relationships in terms of learning difficulties." During the year 1923-24 a group of the faculty of Teachers College met regularly to study further research in household arts education. Needs, problems, and methods of study were formulated by Professors Bonser, Rugg, Winchell, Cooley, and Snedden, and criticisms were given by other members. Miss Florence Winchell was the working member of the committee. She assembled studies already made which gave information on homes and needs of children, and facts regarding consumers. At the end of that year a research associate in household arts education was appointed. During 1924-25 a group of thirty members of the practical household arts and education faculties of Teachers College met monthly with Dean Russell to discuss and arrange a program of home economics educational research. Since a sound basis was desired, the research associate made three preliminary studies: (1) a field problem study; (2) a study of research methods and their possible use in home economics education; (3) a study of bureaus conducting social and educational research—their programs and office organization.

THE FIELD PROBLEM STUDY

The question, "What do you consider some of the most insistent problems of home economics education in public schools?" was asked

(through interview, analysis of writings and questionnaires) of five groups of people—general educators and administrators; home economics teachers and supervisors; mothers and homemakers; well-informed laymen and social workers. One thousand statements of problems were classified and analyzed. These problems were grouped under four main headings: What to teach; Why and where teach it; How teach it; How administer it. A large majority of the questions fell under the "what, why and where"—such questions as, What is society demanding of home economics? Why do not more girls elect home economics? Why not teach all girls home economics instead of only 14 per cent, as given in the report of the United States Bureau of Education? Why not teach boys home economics? What is most important to teach in home economics? Why don't home economics teachers use textbooks more? Isn't home economics being taught in high schools as a vocational subject when it should be taught as a cultural subject? Why is there not more reflective thinking in the home economics classroom? Why should there be so much repetition in home economics taught in junior high school, senior high school, and college? Is the buttonhole, for instance, used enough in practical home sewing to warrant drill in school? Two hundred distinct problems appeared, and were used as a basis for the program of the office.

RESEARCH METHODS

The scientific method has only recently been applied to home economics education. It involves an objective rather than a subjective approach. There is a setting up of the problem, a collection of data, an analysis of the data for meanings and conclusions; then a checking of results in life situations or through statistical procedure. Educational research tools have been developed. Franklin Bobbitt has made an analysis of practical arts activities. Henry Harap has used social statistics for setting up objectives. W. W. Charters has developed methods for the analysis of duties and traits. Harold O. Rugg has emphasized the study of real social problems and the use of "frontier thinkers" as a means of measuring values. David Snedden has called attention to the use of case groups and the need of methods for determining social values. E. L. Kirkpatrick, through his surveys of living costs in farm homes, has secured valuable data on homes. Miss Florence E. Winchell, in her study, "How can household arts be made more effective?" has used the experiences

of specially trained homemakers. Dr. G. A. Works has reported a classroom study in New York State. Various home economics curriculum surveys have been attempted, such as the one in Denver. All these are helpful. If home economics teachers would carry on and gather together the results of classroom experiments in a scientific fashion, we would discover many facts regarding the teaching of housekeeping, home life, consumer problems, and information and facts about children. If such data collected by individual teachers could be brought together and used, home economics people could make rapid strides in educational research. The techniques used by the office of research in home economics education have been carefully worked out with the aid of many individuals. The education faculty (especially Professors Briggs, Rugg, Snedden, and McCall) was helpful in setting up the research method. The work, as it has been progressing, has been reviewed by specialists and checked with other curriculum studies.

THE PROGRAM OF WORK

A study of social and educational research bureaus and their programs led to the formation of the program of work of the office along two lines—fact finding and fact disseminating. A file of unbooked materials on home and family life (now numbering some four thousand bulletins, pamphlets, courses of study, unprinted papers, etc.) was collected. These are available to all graduate students desiring to make research studies. The file is kept up to date. The office also compiles annually for research purposes lists of new literature in the field. Tentative brief reports of all studies are made by the office. These can be secured for immediate school development purposes, but the office is not an information bureau and cannot distribute materials widely. The plan is to issue the research findings in monograph form when a unit is completed.

The purpose of the office was tentatively stated: "To find the facts and figures that will (1) aid supervisors and committees in revising courses of study to keep the home economics content and practices up to date; (2) aid educational administrators in understanding the place of home economics materials in the general curriculum." The office has a directing committee consisting of Professors Bonser, Cooley, and Winchell. It has a consulting group of over thirty faculty members. The main program of the office is one of curriculum research. Two lines of approach to curriculum materials are being

considered: (1) "What is," based on studies of common practice in the field; (2) "What should be," based on an analysis of home and family life activities and needs.

COÖPERATIVE RESEARCH

The work of the office, as planned, is a coöperative effort of faculty members, students, field groups of teachers, social workers, and business people. This "age and generation" demands coöperation in research. It is essential in securing the desired facts. Students registered in the regular courses offered in the College may do a problem in research contributing to the program of the office. Students cooperating with the office have felt that this opportunity to do research work gives them (1) a working knowledge of educational research method; (2) an opportunity to clarify their ideas and to make a contribution, and (3) an ability to apply the principles of education in the development of curriculum and classroom materials. The field has coöperated thus far by filling out descriptive blanks and sending in organization and school materials. Definite plans have been outlined for a study of interests in home activities which will need the coöperation of a number of school groups. A few commercial contacts have been made with the hope of securing means for getting data on the changing industrial conditions that affect home life. What we should know more about is well illustrated when Mrs. Mary S. Woolman tells of the rise of three distinctly new industries in the last few years—the manufacture of knit goods other than stockings; machine lace of greater variety; and rayon. What to teach about these changes needs definite study. A detailed analysis of advertising, merchandising, and other literature written for the commercial field has been made by Miss Rosamond Cook for facts which the consumer could well know in regard to merchandising and the economics of retailing and marketing. It is thought that this study will be a background for further coöperation with commercial and industrial fields. Coöperations have been secured by Miss Esther M. Cundiff with commercial concerns for obtaining information about men's clothing.

COMMON PRACTICE STUDIES

Common practice is best discovered through classroom visitation, but this is a procedure too expensive for the results to be expected. We have based our work on reports from the field and analysis of

materials. The following studies have been completed: Home economics subject matter as emphasized in one hundred courses of study, grades seven to twelve; Grade placement and time allotment of home economics as found in two hundred school reports; Educational trends in Home Economics as secured through an analysis of fifty educational writings and one hundred courses of study; Home Economics Terms as found in fifty home economics writings and one hundred courses of study. Studies of common practice now being carried on are: Home economics materials in general courses, grades one to six and grade placement of home economics topics as found in one hundred home economics courses of study.

There are many conclusions of interest drawn from these studies. The favored grade placements for home economics are: required seventh and eighth grades; elective ninth, tenth, eleventh and twelfth grades. There are more schools requiring home economics in grade nine than in grade ten. The favored time allotments are ninety minutes per week for grades seven and eight. The sixty- and ninety-minute periods per lesson in the junior high school are evenly distributed. This would seem to mean that the sixty-minute period is increasing. The "emphasized subject matter" study shows a distinct trend toward generalization of home economics subject matter in one year rather than one year of cooking and one year of sewing. This analysis of one hundred courses of study may not show what is being done in the classroom, but it shows what the leaders in home economics education are recommending. Many of the social elements of our subject are included in some of the courses, such as the child welfare problem, housing problem, and family relations. The personal approach of the pupil to the material has received some favor, such as the girl's own diet, the girl's own wardrobe, the girl's budget, the girl's room, etc. The purely technical topics seem to be losing ground as distinct subjects, such as household bacteriology and science of cookery. This material is probably being included under an applied topic. As would be expected, the courses still emphasize the construction phases of clothing and preparation phases of foods.

ANALYSIS OF HOME AND FAMILY LIFE

This is the major work of the office and the coöperating students. The technique for the study was set up with the special assistance of Professors Rugg, Briggs, Snedden, Cooley, Winchell, and Bonser.

The study is an analysis of both actual and ideal activities of the various members of a common type of American home with evaluations for curriculum importance. A common type of American home was set up statistically by census reports, living costs, and other figures, as a case group. It is an extensive study and as first planned will take three years for completion. The first step will be finished at the end of this year. The activities are being grouped in the following classes: Income and Spending; Feeding the Family; Clothing the Family; Housing and Furnishing; House Operating; Child Care; Home Appreciation and Family Interrelations; Family Community Relations; Family Health; Home Culture and Sociability.

The term "activity" is being used to include active thinking, feeling, and being, as well as doing. The activities are being secured from a composite of sources, too long to list here, but mainly from home members and experienced workers with homes. One questionnaire study was made for the special problem of man's share in home and family life. The activities have been classified and set up through the coöperation of many students, and are now being refined and checked for completeness by the law of diminishing returns and comparative studies of kinds of life activities and aspects of life. All kinds of life activities, such as the getting-securing activities, the utilizing-enjoying activities, and the upkeeping activities, are being included. Home life is being analyzed from its various aspects, such as health, scientific, aesthetic, economic, productional, social, psychological, evolutionary or historical, cultural, recreational and managerial. Special attention is being given to the appreciation activities. The lists made include variables in the home, even of the common type, such as the single, double, or group income. (In a recent Rochester study it was found that, of the 17,000 married women earning an income, 13,000 of them were living with husbands and 25 per cent of the mothers working for money had children five years of age and under ten years of age; 21 per cent had children under five years of age. It was shown that 28 in every hundred mothers are earning an income.) Over 30,000 activities (unit home performances) have been interpreted, classified, and listed. In the detailed topic tabulation of courses of study, 20,000 additional items have been interpreted and classified. We do not expect that any one person performs all the activities listed. Neither are we certain that all the activities of any one member of the family are included. The further question has been asked, What abilities do the members of the family need to

have to perform these activities with an optimum of personal satisfaction coming through creative interest and conservation of goods, labor and money? Then, what aspirations or ideals are desirable in ordinary home life? In working with "ideals" studies are being made of desirable traits or attitudes in homemaking activities and standards as already agreed upon by social group or expert thinking.

DIFFICULTIES OF THE STUDY

All who have been working in this coöperative research realized that the setting up of technique and the securing of data for such a study were difficult matters. There are many reasons for this: (1) Home living is a non-sequential job. A functional study of a sequential job is simple in comparison. We would not want home living to be routinized, so care must be taken not to over-standardize. Dr. Charters writes that activities for non-sequential jobs must be secured from knowledge born of experience. The analyst finds it necessary to make supplementary analyses by long continued, personal observation. (2) An activity analysis must include both mental and motor activities. Mental and emotional activities are difficult to interpret. (3) The study is made more difficult because of the dual problem in education, of training both for future living and for present living. This affects home economics. If all activities of adult homemaking were left until the "interest period," they would not be taught in public schools as now organized, for there are few homemaking schools for brides- and bridegrooms-to-be. We include not only the activities of the homemaker—man and woman—but of the home member—boy and girl. (In the study in Denver it was found that only 6 per cent of the children helped with a baby at home, but 80 per cent of the parents desired that children be taught in school the care of the infant. Since there is no assured later training school for homemaking, this seems necessary.) (4) Another difficulty is that of training the research workers. Before they are ready to have a share in this research, they must have "knowledge born of experience." Teachers College is fortunate in having many students of this kind. Then, research workers on a functional analysis must have an interest in life activities. We find a great need for workers who desire to study life situations and apply life values. This is probably natural, since our previous training has largely been academic. We necessarily must do what Dr. Frank M. McMurry says he has done with his classes, "Teach grown folks how to study."

Our office has to show the workers how to organize their thinking, classify their materials—the mere rudiments of the problem-solving method.

WHAT ARE WE GOING TO DO WITH THE ACTIVITIES?

Determine their values in terms of their frequency of performance in life and their urgency in life. This will give us the importance of the activity in life. For importance in the curriculum we will modify this by an evaluation for "extra-school learning" as a child and "on-the-job learning" as an adult. The frequency of performance is a little different from the frequency of performance usually secured. The term, frequency, in our study means, Is it performed by a member of the family daily, weekly, or less often? In most studies frequency of performance means the number of cases in the group who perform the duty or activity. (For instance, in a recent New York State survey, it was found, according to frequency, that 92 per cent of the housewives owned sewing machines and 68 per cent made coats at home, etc. The criteria used are weighted for levels or degree.) The evaluations are to be secured through selected judgments of people qualified to judge, such as those living in homes and working directly with homes. The weightings will be studied statistically for validity or worth of the weighting. There are some activities that we all agree are self-evident. These will be checked out and where there is a difference of judgment the activities will be further weighted.

HOW ARE THE RESULTS TO BE USED?

It is expected that the activity lists with evaluations will, when published, be suggestive to general curriculum-makers, as well as to those interested in planning the home economics aspects of the curriculum. The studies are being carried on as contributions to the curriculum from grades one to twelve—not specifically to home economics as it is now taught. It is assumed that training for home life is necessary to-day and that such training naturally would begin with the early grades and extend in some form through all the grades. It need not be called home economics, but it has elements of home and family life in it. The activities of life may be divided by the curriculum-maker into three groups: vocational activities, home-life activities and other social activities or extra-home-life and extra-vocational activities. This study attempts to analyze fully one of these

groups—the home-life activities—for the various members of the family. The study will show the activities of major, minor, and median importance. The maker of courses of study can use the study in setting up a curriculum program, making local application for any type of pupil, adolescent boy or girl, younger boy or girl, for present home membership or for future homemaking. Placement of these materials is the next step to be secured through studies of child interest, learning difficulty, and curriculum feasibility. Trial studies along this line have been started. This research is essentially an attempt to secure curriculum materials from a study of home life situations and life values.

ANNIE ROBERTSON DYER
Research Associate in
Household Arts Education

NEW STUDIES IN EDUCATION

MEASURING EFFICIENCY IN SUPERVISION AND TEACHING*

Some of the questions which this study undertakes to answer are given below, followed by a brief statement of the answer to each.

In a practical program of supervision, how can one best utilize the results of intelligence and educational tests?

The supervision phase of this study took place in a residential town with a population of about 10,000. A testing program was undertaken in grades three to eight inclusive in order to answer certain questions first formulated by the superintendent and principals of schools. The program of testing was followed by a program of supervision. The study shows what graphic and other devices were employed in presenting the results of the testing program at general meetings of the entire teaching and supervisory staff, and what successes and failures were encountered in bringing about an alteration in educational emphasis, in classification of pupils, in the materials and methods of instruction, and the like. An enumeration is given of some of the errors to be avoided in the planning and administration of a program of supervision based on measurement.

Attention is also given to special meetings of parent-teachers' associations, reports to the board of education, testing for the formation of special classes, parent interviews, improvement of teachers' examinations, and the like.

What was the worth of the foregoing program of supervision based on measurement and how was this worth determined?

The worth of the program was evaluated both subjectively and objectively. Semi-subjective evidence is offered to show that the program resulted in keener interest on the part of the staff in current educational problems, better understanding of the tools of the educational profession, greater focussing of attention on balance of emphasis, and a more scientific attitude toward education.

A technique was evolved for measuring in objective units the worth

* Crabbs, Lelah Mae, *Measuring Efficiency in Supervision and Teaching.* Teachers College Contributions to Education, No. 175.

of the supervisory program. This technique, which is described in detail, shows that the value to this school system of employing a supervisor who based the supervision on such a program of measurement was approximately 1600 typical pupil years in silent reading, about 400 pupil years in arithmetic, about 400 pupil years in spelling, about 800 pupil years in composition, and about 600 pupil years in penmanship.

What is the most effective method of measuring a teacher's efficiency?

A discussion is given of the stages in the evolution of a valid method of measuring the efficiency of teachers. These are, in temporal order, general impression stage, score card and human ladder stage, and objective measurement stage. The merits and defects of each type are pointed out, thus justifying the selection of the Accomplishment Ratio teaching efficiency formula for use in this study.

Do teachers differ more in their efficiency of teaching certain subjects than in their efficiency of teaching other subjects?

Teachers are most alike in their efficiency of teaching spelling. They differ most in their efficiency of teaching silent reading. In fact, they differ almost three times as much in their ability to teach reading as in their ability to teach spelling. The variability in teaching efficiency for the different subjects was as follows: spelling 2.9, arithmetic 4.2, penmanship 7.4, composition 7.7, reading 8.3. Some tendency is shown here for teachers to differ more in those subjects which are complex.

Do the more efficient teachers of one subject tend to be the more efficient teachers of other subjects?

There is a slight tendency for the more efficient teachers of one subject to be the more efficient teachers of any other subject, but this tendency is very slight, being represented by a coefficient of correlation of approximately .20. No one subject is conspicuously superior or conspicuously inferior to any other subject in this respect, though there is a tendency for wider subjects like reading and composition to be superior to narrower subjects like spelling and the fundamentals of arithmetic. In the case of penmanship, there is a slight tendency for efficient teachers of this subject to be inefficient teachers of other subjects.

Are teachers who have the most comprehensive knowledge of modern educational ideas and practices the most efficient teachers?

Such differences as exist among normal school graduates in their

knowledge of modern ideas and practices make no difference in their teaching efficiency in the subjects tested and as measured by the formula used in this study. So great is the significance of this finding for the training of teachers that more exhaustive studies of this question should be instituted at once.

Can teaching efficiency be judged by supervisors accurately enough to be of any practical value?

Supervisors ranked the teachers on their ability to teach silent reading as measured by the Thorndike-McCall Reading Scale visibly present before them. The correlation between this ranking and objectively measured efficiency in teaching reading as measured by this test was approximately zero. It is possible that supervisors can rate general teaching efficiency accurately, even when they cannot rate teachers for their efficiency in teaching a single subject like reading. However, since reading is central both as a separate subject and also through its contribution to all other work of the school, failure at this point strongly suggests that supervisors cannot rate teaching efficiency accurately enough for their ratings to be used for any important purpose.

Are those teachers who are most successful in teaching skills also the most successful in building character?

The correlation between objectively measured ability to teach skills and subjectively estimated ability to build character in pupils is very close to zero. This does not necessarily mean that there are two distinct types of teachers, skill and knowledge builders, and character builders. For this to be so, the above correlation would need to be a high negative rather than a low positive. Neither is the opposite true, for this would require the above correlation to be a high positive rather than a low positive. Just what is the truth probably cannot be told from the above correlation because it is probable that no more dependence can be placed in supervisors' estimate of ability to build character than in their estimate of ability to teach reading. If we accept the accuracy of supervisors' estimates, we can be certain that character builders tend strongly to be skill and knowledge builders also, for there is a high positive correlation between supervisors' estimates of teachers with respect to these two items.

Is that teacher penalized by the teacher efficiency formula whose pupils start with a high Intelligence Quotient or high Accomplishment Ratio?

The teacher efficiency formula used in this study penalizes the

teacher whose pupils have high IQ's, provided the pupils also have high mental ages. With this exception, the teacher efficiency formula gives fair opportunity to a teacher regardless of the initial IQ or the initial Accomplishment Ratio.

Is there any difference between rural and urban teachers with respect to the answer to any of the above questions?

There is a general tendency for intercorrelations between objective efficiency measures to be higher for urban teachers than for rural teachers.

On the average, teachers in rural three-room schools proved to be more efficient than teachers in two-room rural schools, teachers in two-room rural schools proved to be more efficient than teachers in one-room rural schools, and teachers in rural schools proved to be more efficient than teachers in urban schools. This conclusion is based upon 60 rural teachers in a county in Maryland and 20 urban teachers.

CONTRIBUTIONS IN STATISTICAL METHODOLOGY DEVELOPED BY THE STUDY

The technical specialist will be interested in the statistical procedure whereby the program of supervision was evaluated, and in the studies of the effect upon the validity of the teacher efficiency formula of initial Intelligence Quotient, initial Accomplishment Ratio, and the use of the same intelligence test records in the calculation of both initial Accomplishment Ratio and Final Accomplishment Ratio.

Also, a method was developed for calculating a *fused r,* that is, a coefficient of correlation from several scatter diagrams superimposed upon each other. This *fused r* effects a tremendous saving in time, since it is the same r that would be yielded by calculating separate r's for all of the separate diagrams and then averaging these r's.

A STUDY OF LEARNING AND RETENTION IN YOUNG CHILDREN *

In all education three factors are essential: a guiding, integrating philosophy; appropriate specific techniques; and the measurement of results. There are now available fairly adequate statements of aims, objectives, desirable ends which form bases for procedure in the primary and kindergarten field. But little is known of the specific

*Meek, Lois Hayden, *A Study of Learning and Retention in Young Children.* Teachers College Contributions to Education, No. 164.

techniques by which these may be accomplished. The realization of the need for objective study of such problems instigated the research here reported.

The purpose of this research was to study the effects of certain selected factors upon the learning of young children in connection with reading. The factors were: (1) varying amounts of initial practice, (2) varying amounts of later practice, (3) similarity of associated words. Six words were selected to be taught: *ball, flag, doll, lion, duck, rose.* For each word taught five other words were selected to act as confusing words in the total learning situation. For instance, when *ball* was taught, *burr, feel, sole, bake,* and *kill* were presented at the same time. These associated words each had some letter similarity to the word which was being taught. The associated words were never taught, but were only used as confusing elements in the total learning situation.

The words were presented by means of a game in which the child found the toy (ball) if he could find the box which had the word *ball* on it among the five other boxes with the similar words upon them.

The children used in the experiment were all in the Horace Mann kindergarten and nursery school of Teachers College, Columbia University. There were three groups with chronological ages centering around four, five, and six years.

Factors in Learning and Retention. It is desirable to know what effect initial practice has upon how well children learn the word and how long they remember it. In order that this phase of the problem might be studied, the children learned one word with two repetitions, one word with five repetitions, and one word with eight repetitions at the first practice period. At each of the later practice periods the children repeated the word correctly only two times. It was found for the five-year-old group that two initial repetitions were not sufficient practice; that eight initial repetitions caused too much difficulty; and that five initial repetitions seemed most effective because they did not cause much difficulty at the initial practice period and gave good results at the end of thirty days. For the four-year-old group probably something between two and five initial repetitions would be most effective. Comparison of the learning curves for the four-year-old group with those for the five-year-old group showed that age is a factor in decreasing the average amount of time taken for learning and the average number of mistakes made.

There was an opportunity here to study the effect of the time interval upon learning. Altogether there were six practice periods, which secured a gradual lengthening of the time interval from one to fourteen days and made the last period come thirty days after the initial period. A study of the learning curve showed that when the word was recognized only twice at the first practice, the time interval was too large after the second practice period. In other words, if Mary learns *ball* on Monday well enough to recognize it twice in succession, she will be likely to be able to repeat the performance on Tuesday, but by Thursday she will need help to do it. The same thing would be true if she had recognized it five times on the first day. However, if she had recognized it eight times on Monday she would know it on Tuesday, on Thursday, and on the following Monday, but would not know it nine days later.

This experiment showed the same thing that Bryan and Harter, Book, Ruger, and others have found: That after a certain period the learning curve shows a "plateau," a time of loss of interest, of no apparent improvement, the kind of period that people call a "slump." One cause for the appearance of these plateaus in learning curves is that especially difficult associations are being made. Demanding that children recognize a word eight times in succession at the first learning period seemed to force them to analyze the word and to begin to form very difficult associations. It may be very good for children to make this close analysis of words, but there is the pedagogical question of whether or not more is lost than gained. It would seem that the added practice, forcing the more subtle cues, might be given gradually and excessive slump periods for young children thus be avoided. Such a distribution of practice was tried and is discussed in Chapter III of this study.

No matter what the distribution of practice or the arrangement of time intervals, all of the learning curves showed some forgetting at each period, whether it was twenty-four hours later or fourteen days later. It seems that no matter how much children of this age overlearn a word on one day, some of them will not remember enough to recognize the word the next day. But in no case was there total forgetting. Something was saved each time which contributed to the relearning.

A study was further made of the improvement in the children's learning from the first word they learned to the sixth word. The improvement in learning and the correlation of their ability to learn

these words with four other measures of learning ability are reported in Chapter V.

Cues for Word Recognition. A part of the research was devoted to a study of how children recognize words. Recognition in the general experiences of life often depends upon some special mark or characteristic which becomes a clue to the whole situation. A man recognizes his wife in a crowd by the feather on her hat; a teacher recognizes a pupil by the peculiar tilt of his left shoulder. These special marks of differentiation do not, however, constitute the total cue or stimulus for recognition. The total cue is probably a combination of many, many subtle stimuli which form a setting for the differentiating cue or cues.

The question of word recognition is a vital problem in the pedagogy of reading. One of the essential mechanics of good reading is quick and accurate perception of words. To give children facility in word perception is part of the teacher's problem. To do this, the first step is to know what cues children use for word recognition. An analysis showed some thirteen different possibilities, among them the initial letter or letters of the word, the final letter or letters, and the middle letter or letters.

With each word taught, five other words which had some letter similarity were associated with it. A total of 1864 record sheets on 68 children gave the basis for analysing the cues used. The following conclusions seemed warranted:

1. The children did, deliberately or accidentally, hit upon certain letters or groups of letters for means of identification of words.

2. The last two letters were more often used as cues than the first two or middle two letters.

3. The initial letter was more often used as a cue than the final letter.

4. The middle two letters were used least of all as a cue. Further experimentation should be done with words like *play* and *wood*.

5. Certain letters or groups of letters which have a peculiar formation, such as *i, g, ll, o, k,* seem to be selected as cues.

6. There are scarcely any data on whether the geometrical shape of the words is used as a cue. The relatively small number of confusions of *case* with *rose* and of *kill* with *ball* may be indicative of its slight effect. However, *doll* was confused more often with *kill* than any other word. This could be explained easily by the *ll* which was mentioned by the children several times.

7. In general the cue selected seems to be dependent upon the total situation which is set up. Had *ball* been put among *ring, face, coat, life, hand,* the *b* would have been an adequate cue and probably would have been used. Further experimentation should deal with words having similarities in the first and final letters. For example, associate *rate* with *rose, deal* with *doll, frog* with *flag, boil* with *ball, lean* with *lion,* and so forth.

The first and the last conclusions seem the most important contributions of this part of the study to the pedagogy of reading. If children do use letters for cues, and the ones they use are dependent upon the total situation, there is a responsibility upon the teacher to set up that situation which will direct children's attention to the cue which will be most adequate in a reading situation. Further research must determine:

1. The adequate cues for words in the English language. This can be found only by a study of words and the context in which they are found.

2. Whether a child from the very beginning should be taught the complete cue for every word, the cue that will serve him all his life, or whether the complete cue should be developed gradually. This would mean a definite plan for increasing the difficulty of the learning situation.

3. Whether the cues for recognition of a word should be made a conscious part of a child's knowledge or whether they should be developed through the arrangement of practice without conscious focussing of attention upon them.

Special Case Studies. During the experiment notes were carefully kept on the record sheet of the remarks and other behavior of the children. These data give a more complete picture of the total learning situation. An analysis was made of the records of five children who had difficulties in learning the words, and these case studies are presented in Chapter VI. They indicate in a very vivid way some rather pertinent suggestions for those interested in the education of young children: first, the necessity of organizing the learning situation so as to protect children from continued failure and dissatisfactions; second, the need for teacher help and guidance at specific places in learning; third, the need for thorough analysis of the learning situation to determine just when and what help and guidance should be given; and fourth, the need for a realization of the effect of emotional disturbances upon learning.

COLLEGE NEWS

TRUSTEES

By action of the Trustees of Teachers College at their annual meeting held on Thursday, February 18, the following named members of the Faculties were promoted from and after July 1, 1926:

Faculty of Education:

Rollo G. Reynolds, Ph.D. Provost of Teachers College with the rank of Professor.

Lester McL. Wilson, Ph.D. From Associate Professor to Professor of Education.

J. Ralph McGaughy, Ph.D. From Associate Professor to Professor of Education.

Willystine Goodsell, Ph.D. From Assistant Professor to Associate Professor of Education.

Edwin H. Reeder, Ph.D. From Associate in Elementary Education to Assistant Professor of Education.

Maxie N. Woodring, Ph.D. From Associate in Secondary Education to Assistant Professor of Education.

Robert B. Raup, Ph.D. From Instructor in Philosophy of Education to Assistant Professor of Education.

Faculty of Practical Arts:

Charles J. Martin, B.S. From Associate Professor to Professor of Fine Arts.

Harry L. Hollingworth, Ph.D., Professor of Psychology in Barnard College, was assigned to a seat in the Faculty of Education.

The Budget for the maintenance and operation of Teachers College and its Schools and residences for the fiscal year 1926-27, amounting to $3,169,848.00, was adopted.

A DINNER TO DR. THORNDIKE

To describe the details of the Testimonial Dinner given on February 19 in honor of Dr. Thorndike and his twenty-five years of achievement at Teachers College is not difficult, but to express in words the honor, the respect, and the affection which this tribute carried with it is impossible.

Two hundred and fifty of his colleagues, his co-workers and his intimate friends at the Faculty Club met to do him honor. Dr. David Eugene Smith presided at the finely appointed and beautifully decorated tables. The gathering was comprised of prominent educators and psychologists from every part of the country.

Following the dinner came the speeches, all of which expressed not only admiration for Professor Thorndike's achievements as a psychologist, and his skill as a teacher, but even more strongly, love and affection for him as a colleague and as a friend. Those who spoke included Dean Russell; President Nicholas Murray Butler; Professor J. McKeen Cattell, president of the Psychological Corporation; President Henry Suzzallo, of the University of Washington; Frederick P. Keppel, president of the Carnegie Corporation; Professor George D. Strayer, of Teachers College; and Professor Robert S. Woodworth, of Columbia University.

Mr. Felix M. Warburg presented Dr.

Thorndike with a beautiful loving cup, the gift of the Board of Trustees of Teachers College. Professor Theodora Whitley, of the department of Psychology of Teachers College, most gracefully presented a leather bound copy of the "Thorndike Number" of the *Teachers College Record*, containing a complete bibliography of his professional works, biographical sketches written by his friends and former students. A specially bound volume of this edition was given to each guest as a memento of the occasion.

Professor Smith then read dozens of telegrams and letters of congratulation from distant parts of the world. Dr. Thorndike, speaking in response to the tributes, said in part:

> I have hopes and dreams, some in the field of psychology and some outside. One hope is to find out what learning really is, and how it occurs. Another is that the measurement scales of the future may be placed on a firmer foundation of science.
>
> Outside the field of psychology, I have hopes and dreams reaching to the problems of government, economics and morals. It seems a pity that man, who has progressed so far in his mastery of nature, has not yet mastered himself. The barriers which exist to-day are no longer physical; they are psychological and social. Is it not possible that psychology will help man to improve his mental tools?
>
> Man is not master of his own self. Can psychology dare to attempt the task? At least I feel that I should like to make a beginning.

In the *New York Times* of February 21, 1926 the following editorial appeared:

A MASTER TEACHER

Seldom does a teacher have such recognition from his own profession as has been given Dr. Edward Lee Thorndike, who, just past fifty, has finished twenty-five years of incessant service in the cause of education and has a sure place in its history, which cannot be written "without giving prominence to his name." One of his fellow psychologists and teachers, now a dean in a mid-Western university, said of him that no school is uninfluenced and no humanistic science is unaffected by his labor. A celebration beginning at high noon and extending through the rest of the day into the night was held in his honor on Friday at Teachers College. Messages came by telegraph and letter from near and distant parts of the world. A volume of tributes from those best able to appraise his varied activity and incredible productivity, together with a bibliography of "some thirty books and three hundred articles," has been published to mark the end of a quarter century which finds him going on with tireless energy in researches which his "prodigious intellect" is ever projecting for itself. Thousands of graduate students who have studied under him are scattered over the world and hundreds of thousands of school teachers, principals and superintendents, college professors, and even laymen, who have never seen him or heard his voice, have, as President Suzzallo of the University of Washington says, modified their thought and practice in education under the influencing currents of his mind. Some one writing of "Thorndike in China" testifies that his is one of the four or five best known foreign names in educational circles in that land, and adds that to write an account of his influence in that country would be writing the history of the new educational movement in China during the last six years, for many of the leaders in that movement are "Thorndike disciples."

Dr. Thorndike began to develop his "laws of learning" through his researches in the field of animal intelligence—studying not only their sagacity but their stupidity. "Never," said he early in this period, "will you get a better psychological

subject than a hungry cat." Years later he announced the conclusion, in terms of the human mind, that "the work of education is to make desirable activities pleasurable and to inhibit their opposites by discomfort," which quite contravenes the philosophy of those who seek perfection of character and fruitful achievement through doing what they most dislike to do. But as another of Thorndike's pupils, now a professor of education in a Canadian university, remarks: "Practice does not make perfect if the resultants of the practice are painful"; and he adds that nobody achieves perfection in sitting on a pin or poking a fire with his finger.

But the Thorndike thesis which challenged the tradition of the ages and provoked most contemporaneous discussion and conservative alarm was that "improvement in any single mental function rarely brings about equal improvement in any other function." Following this psychological bombshell fell another menacing even wider demolition to long-cherished theories. It was that the difference between studies having greatest influence upon the gain in the power to think, ranging from arithmetic to sewing and stenography, was "almost negligible." If it is true that languages and mathematics have only slightly greater power to improve the mind, as a whole, than forestry, nursing or agricultural science, it is well that the world should know it—and the best wish that the world can offer this humanistic scientist is that he may have another twenty-five years in order to complete his demonstrations.

It appears that what a man can do, says Dr. J. McKeen Cattell, president of the Psychological Corporation and editor of *School and Society,* who was once Dr. Thorndike's teacher, "is prescribed at birth," but that "what he does is dependent on circumstance." Dr. Thorndike had a most generous prescription at birth. Untold thousands hope that "circumstance" will continue to be propitious.

STUDENTS GIVE A DINNER IN HONOR OF DR. SMITH

Dr. David Eugene Smith, Professor of Mathematics in Teachers College for the past twenty-five years, retired from active service on February 1, 1926. By unanimous vote of the Board of Trustees, he was appointed Emeritus Professor of Mathematics from the date of his retirement, and invited to retain the use of his present office. The room adjoining his office was assigned for the housing of his mathematical library. By this arrangement Professor Smith will assist all who may need to use his library or who may wish his unofficial counsel concerning any of their problems, although he has discontinued his active work in teaching.

A dinner in honor of Professor Smith was held by his former students on Saturday evening, March 6, at the Men's Faculty Club of Columbia University. It was wholly a student affair, the attendance being limited to former members of his classes, to the mathematics staff of the institution, and to a few invited guests from outside the University. About 175 persons were present. The dining room had been arranged in a particularly attractive manner, the decorations being in charge of a special committee of students. At each place there was a beautifully inscribed card containing a quotation from some one of Professor Smith's writings.

After the dinner the program of speaking opened with remarks by Professor Clifford B. Upton, the toastmaster of the evening, who studied under Professor Smith twenty-eight years ago at the Michigan State Normal College at Ypsilanti. The speakers were introduced in the following order:

Professor Lao G. Simons, who took her Doctor's degree at Teachers College under the guidance of Professor Smith,

spoke of his valuable researches and writings on the history of mathematics and of the inspiration which he has given to students working in that field; Mr. William E. Stark, superintendent of schools of Stamford, Conn., who studied with Dr. Smith during his earlier years at Teachers College, reviewed his wide influence in improving the teaching of mathematics in the secondary schools of this country; Mr. George A. Plimpton, of Ginn & Company, who has assembled the largest collection of early printed textbooks now available anywhere in the world, expressed his appreciation of Professor Smith's invaluable help in assembling this collection and outlined his wide influence as a leading author of textbooks for elementary and secondary schools as well as for colleges; Dr. Cassius J. Keyser, Adrain Professor of Mathematics at Columbia University, spoke of Professor Smith's high standing in his chosen field and of the appreciation shown in his writings of the real significance of the science; Mrs. Mary Alice Phillips Pilliod, one of Dr. Smith's former students and recently an instructor in mathematics in the Horace Mann High School for Girls, spoke of Dr. Smith's great personal influence on the classroom teacher, closing with the following appreciative remarks which were presented to Professor Smith on a beautifully inscribed card:

DAVIDIS EUGENIUS SMITH

Doctor Noster et Magister

Et qui doctor! quam acutus, quam eruditus, quam artis suae peritus! Cum eum laborantem spectabamus, facile perspicere poteramus, qualis is esse deberet, qui rem mathematicam docere vellet; cum autem docentem eum videbamus, tum denique intellegere poteramus, quo modo hoc faciendum esset. Quid dicam! Et auctor et magister, imitandus est et non imitabilis.

This tribute admits of free translation as follows:

DAVID EUGENE SMITH

Our Teacher and Master

And what a teacher! How brilliant, how learned, how skilled in his art! When we beheld him in his study we could readily see what qualities a teacher of mathematics should possess; when we saw him teach, then we could understand what real teaching should be. What more shall I say? Both as author and teacher he is one to be imitated, and yet inimitable.

The program closed with a very impressive talk from Professor Smith himself, in which he expressed his appreciation of the honor the students had conferred upon him, mentioned the ideals which had guided him, and referred to his retirement from active service.

In the middle of the program a feature in lighter vein was introduced which consisted of an impersonation of Professor Smith by Miss Charlotte Huber, a junior in the Horace Mann High School for Girls, who reproduced with many variations a lecture on old mathematical books and manuscripts which Dr. Smith had given recently before a general assembly of the pupils of the Horace Mann School.

Numerous telegrams and letters appreciative of Professor Smith's work and personal influence, which had been sent by former students from all parts of the country, were read by the toastmaster.

Announcement was also made that the portrait of Professor Smith, toward which his students and other friends have contributed, is now being painted and will probably be completed some time in April.

The arrangements for the dinner were in charge of the following committee: Edith I. Atkin (chairman), Helen Walker, Harold H. Bradley, Vera Sanford, Dorothy Matthews, Vevia Blair,

John T. Gilmour, Hope Chipman, Mary MacLennan, William David Reeve, and Clifford B. Upton.

EDUCATIONAL ADMINISTRATION

In connection with the meeting of the Department of Superintendence, Professor George D. Strayer, as chairman of the Legislative Commission of the National Education Association, presented a resolution endorsing the bill establishing a department of education with a secretary in the President's cabinet, which was passed unanimously. On Wednesday morning, February 24, Professor Strayer appeared before the joint committee of the House and Senate and led the presentation of the case in favor of the education bill. The Majority Caucus room in the Senate Office Building was crowded and the sponsors of the bill were most enthusiastically supported by the large number of distinguished educators present.

Members of the staff responsible for the courses of superintendents of schools are congratulating Professor J. R. McGaughy on his promotion and upon the important place which he is to take next year as administrative head of the department of Elementary Education. While they rejoice with him in this larger opportunity for service, everyone is expressing regret over his withdrawal from participation in the courses for superintendents of schools.

Professor Strayer spoke before the Joint Meeting of the National Association of Directors of Educational Research and National Society of College Teachers of Education, in February, on "Job Analysis and the Problem Attack in the Training of Superintendents of Schools." His address was published in the March 6 number of *School and Society*.

A group of prominent citizens of New York City have organized a committee to make an impartial and scientific study of the whole teacher salary situation in the city. It is known as the Citizens-Teachers Salary Committee; Robert E. Simon is chairman. Professor McGaughy has been retained by the committee to conduct the study.

The Committee on Nomenclature of the National Education Association held two conferences during the meeting of the Department of Superintendence in Washington. The committee has determined upon a plan of procedure to be used in defining educational terms and has drawn up a budget for carrying on the work. This budget is to be submitted to the National Education Association for approval. Should the requested appropriation be made real progress in securing agreement in educational terminology is sure to result. Professor McGaughy has been a member of this committee for the past three years. Dean Withers, of New York University, is chairman. Other members of the committee are Professor Kilpatrick, Superintendent Pickell of Montclair, and Professor W. W. Charters.

Dr. Carter Alexander addressed the Joint Meeting of National Association of Directors of Educational Research and National Society of College Teachers of Education, February 24, on the subject, "The Philippine School System."

Professor Strayer spoke before the South Carolina State Teachers Association on Thursday and Friday, March 18 and 19, and before the Central and Northwest divisions of the Iowa State Teachers Association on March 26 and 27.

Professor McGaughy addressed the teachers of West Hartford, Conn., on Tuesday afternoon, March 2. In the evening he was the guest at a dinner given by the principals of the city. At both the afternoon and evening meetings

the general topic of discussion was "The Practical Use of New-Type Examinations."

Superintendent E. E. Oberholtzer, of Houston, Tex., and Dr. Jesse D. Burks, of the Bureau of Educational Service of the San Francisco school system, addressed the second major course for superintendents of schools at their regular Monday Luncheon on Monday, March 1.

A checking list for the use of superintendents of schools in the evaluation of their instructional and supervisory programs has been prepared by Dr. N. L. Engelhardt and graduate students working under his direction. This is available in the Bureau of Publications, Teachers College.

The reports of the surveys of Tampa, Fla., and Hammonton, N. J., have been published by the Bureau of Publications in the School Survey Series. They can be secured by writing to the Bureau.

A second printing is being made of Strayer and Engelhardt's *Standards for Elementary School Buildings.* The original edition has been exhausted, but the new copies will be available by April 1.

The following men of this department have satisfied all their requirements for the doctorate, having stood their final examinations during the month of February: Mr. Arthur K. Loomis, who wrote on "Junior High School Equipment Costs"; Mr. Hans C. Olsen, whose dissertation topic was "The Work of Boards of Education and How It Should Be Done"; and Mr. Harry S. Ganders, who submitted a dissertation on "Educational Records and Reports for Public School Systems in Cities of 5,000 and 10,000." All three of these dissertations will appear in the Contributions to Education series, published by the Bureau of Publications.

The Administration Club held a dinner on Friday, March 5, at the Faculty Club. Members of the staff responsible for the courses in educational administration were the guests of the club. Music was furnished by the Administration Club Octette composed of Messrs. Thomas, Center, Weideman, Smith, Ross, Morse, Farley, Schmidt, and Briscoe. There was a piano solo by Mr. Hughes. Mr. Ford, president of the club, and Professors Mort, Alexander, Reynolds, McGaughy, Engelhardt and Strayer spoke briefly. Mr. Selke was toastmaster. Members of the club, their wives and friends agree that the Administration Club provided a most interesting evening.

ADVISERS OF WOMEN

The Advisers Club held a luncheon at the Men's Faculty Club on Home-Coming Day for its former members who were visiting the College. The guest of honor was Miss Anne Dudley Blitz, dean of women at the University of Minnesota, and chairman of the Research Committee of the National Association of Deans of Women. Miss Blitz, taking as her topic "Essentials for the Dean of Women," gave a most interesting address.

Professor Sarah M. Sturtevant, at the beginning of the semester, entertained the members of the major course at an after-dinner coffee in the Women's Faculty Room of Teachers College.

The Multi-mental Scale,—the intellition of Deans of Women held in Washington in February was attended by a large number of deans who have taken the professional training for advisers at Teachers College. Those alumnae acting as officers of the association or as members of committees were: Miss Anna Eloise Pierce, State College for Teachers, Albany, N. Y.; Miss Anne Dudley Blitz, University of Minnesota; Professor Sarah M. Sturtevant, Teachers

College; Miss Lydia I. Jones, State Normal College, Ypsilanti, Mich.; Miss Edith A. Barnard, State Teachers College, Maryville, Mo.; Mrs. Barbour Walker, William Smith College, Geneva, N. Y.; Miss Dorcas Pritchard, Fairmont State Normal School, Fairmont, W. Va.

Miss Edith Stauffer (T. C. '24), adviser of girls in the High School at Bronxville, N. Y., was elected chairman of the high school section of the Association for the year 1926-27.

Miss Anna Rose (T. C. ss'24), dean of women at George Washington University, D. C., was most successful as chairman of the arrangements for the meeting in Washington. Miss Rose is chairman of the organization of deans in her district.

The state organizations of deans of women in Iowa, Maryland, Michigan, Missouri, Pennsylvania, and West Virginia are headed by alumnae who have specialized at Teachers College in the work for advisers.

Mrs. Sue Durand (T. C. '24) has initiated an interesting project in research in the North Carolina College for Women, Greensboro, N. C., where she is dean of women. Each of the five councillors in her Department of Student Life has undertaken the study of a problem in the guidance of the young women in the college. The results of this study are to be made the basis of future policy in the college.

An interesting account has been received of the activities of Miss A. Jeanette Walter ('25), who is principal of the Chung Eui Higher Common Girls School, Pyeng Yang, Korea. This is one of the two high schools for girls in Korea. There are in Miss Walter's school two hundred girls preparing to be teachers, and on the faculty one other American and twelve native teachers.

Seven members of the major course have visited various colleges in the interest of class projects on which they have been working. Miss Ellen M. Davies studied the health program at Bucknell University, and Miss Margaret Sweeney that at Syracuse University. In order to determine the status and function of the dean of women in these institutions, Miss Irene MacDonald visited Simmons College and Jackson College; Miss Hazel M. Clark went to the University of Rochester; and Miss Caroline Rice to Connecticut College for Women. Miss Elizabeth Young investigated at Swarthmore College the ways and means of promoting the scholarship of women; and Mrs. Dora S. Lewis made a similar study at Barnard College.

BUREAU OF PUBLICATIONS

The first volume in the new School Administration Series is now in press. It is a study by Professor Paul R. Mort, entitled *State Support of Public Education.* The series will include non-technical studies on administrative problems found in actual field work.

Several new volumes in the Studies of the International Institute series are in press or in preparation. *A Survey of the Public Schools of Porto Rico,* Number 8 of the series, will be available shortly.

The Multi-Mental Scale,—the intelligence measurement devised by Professor McCall and his students,—has gone into its second large printing. The *Standard Test Lessons in Reading,* Books II and III, by Professor McCall and Miss Lelah M. Crabbs, have also been reprinted. Books IV and V, devised for use primarily in Grades 5 and 6, are in preparation.

Other publications that are being reprinted by the Bureau are *Problems in Educational Administration* by Professors Strayer and Engelhardt and others; *Standards for Elementary School Buildings,* by Professors Strayer and Engel-

hardt; *The Junior High School at Work,* by Dr. Herbert H. Bruner; and *Decoration and Furnishing of Homes,* by Mrs. Ruth R. Tregenza.

The alternate form of the Schorling-Sanford Geometry Test,—Form B,—will be available during the present month.

Among the Contributions to Education recently published by the Bureau are: *Business Administration of a City School System,* by Harry Pearse Smith; *Certain Phases of the Administration of High School Chemistry,* by William Weston Carpenter; *Children's Social Concepts: A Study of Their Development and Nature,* by Hyman Meltzer; *Comprehension Difficulties of Ninth Grade Students in the Study of Literature,* by Theo. W. H. Irion; *Legislative Control of the Elementary Curriculum,* by Jesse Knowlton Flanders; *Method of Directing Children's Study of Geography,* by Edwin Hewett Reeder; *A Study of the Group Method of Measurement of Sight-Singing,* by Raymond A. Mosher; *Biology in Secondary Schools and the Training of Biology Teachers,* by Charles William Finley; *Ability of High School Students to Select Essential Data in Solving Problems,* by Benjamin W. Daily; *Supervision of Student-Teachers in Religious Education,* by Faye H. Klyver.

ECONOMIC SCIENCE

Mrs. Edith McClure Patterson, director of the Home Economics Division of the General Federation of Women's Clubs, spoke before the students in Household Economics at Teachers College on January 18 and outlined developments of a vocational nature in department stores and other fields where budgeting and household consultancy are being carried on.

Professor Benjamin R. Andrews is a member of the committee on Community Housing of the Association to Promote Proper Housing for Girls in New York City. This association carries on two community clubs for employed women, and also conducts a central registry of rooms at 108 East 30th Street, New York City. The Committee on Community Housing is considering the possibility of development of housing for students and employed women in New York. During the spring semester, several students in household economics courses are carrying on field studies in connection with the association.

Professor Andrews will teach for three weeks in the summer session of the University of Utah in June, giving courses on The Home and Family and on Income Management and Thrift Promotion. The head of the home economics department at the University of Utah is Mrs. Rose Widtsoe, a former student in Teachers College.

A new edition of Mrs. Mary Schenck Woolman's *Clothing; Choice, Cost, Care* is appearing through the Lippincott Press, under the editorship of Professor Andrews.

Dr. Edith Eliner Wood, lecturer on Housing and Town Planning in the 1926 Summer Session, spoke recently at Teachers College on "America's Housing Problem—and Governor Smith's Housing Program."

EDUCATIONAL SOCIOLOGY AND VOCATIONAL EDUCATION

On February 27, Professor David Snedden spoke before the annual luncheon of the New York City High School Teachers Association on the subject of co-education.

Professor Daniel H. Kulp has conducted a series of lectures and discussions at the Russell Sage Foundation for a group of leading social workers in metropolitan New York on the "Applications of Sociology to Improvements

in Social Work Technics." On Tuesday, February 2, he addressed the Child Study Group of the Parent-Teachers Association of Lincoln School on "Elements of Human Nature." Dr. Otis W. Caldwell had preceded this address with several discussions on biological backgrounds of human behavior.

During the past session Dr. Kulp has been coöperating with the kindergarten research seminar in a study on curriculum reconstruction through analysis of child attitudes.

At the annual meeting of the National Society for the Study of Educational Sociology, during the Washington meetings of the National Education Association, Dr. Kulp presented a paper and led a roundtable discussion on "Possible Contributions from Social Work to Educational Improvements." He was assisted by Miss Anna B. Pratt, executive secretary of the White Williams Foundation, Philadelphia.

Dr. Kulp's plan for integrating study and research in educational sociology through a series of committees to devote themselves to special fields with reports in a yearbook of the Society, has been accepted by both branches of this organization.

The Educational Sociology Club joined with Dr. Kulp's class in General Sociology in a theater party, February 16, to study the sociological aspects of "The Goat Song" given at the Guild Theater. Some discussion was devoted to the study both before and after seeing the play. The project was so instructive that a similar study of "Cyrano de Bergerac" was voted unanimously by the class.

ELEMENTARY EDUCATION

Professor William A. McCall, assisted by Mr. Vernon L. Jones, associate in education at Teachers College, was one of the administrators of the survey authorized by the Board of Education of Newark, N. J., to determine whether their All-Year elementary schools should be abolished or continued. The final report of the survey committee was recently published by the Newark Board of Education.

Dr. McCall's phase of the investigation sought to answer two questions. The first of these was: "If a traditional ten-months type of school, with its two terms of five months each, were substituted for every All-Year type of school, with its four terms of three months each, would such a change promote or would it retard the educational advancement of the pupils?" The answer obtained was: "The pupils in the All-Year schools are further advanced educationally than they would be if they had attended a Traditional school instead. Furthermore, the more the pupils in the All-Year schools have taken advantage of the opportunities offered by the All-Year schools, the greater is their superiority over comparable Traditional pupils."

The second question was: "Is there any reason to suppose that the graduates of the All-Year elementary schools would be better equipped to succeed in high school if a Traditional type of school were substituted for every All-Year type of school?" The following answer was given: "The substitution of Traditional schools for All-Year schools would not solve the problem of the lower mental and educational ages of All-Year school graduates, except by a retardation device equally available to the All-Year schools."

The final recommendation presented by the directors of the investigation to the Board of Education was that the All-Year schools be continued.

Professor McCall has been super-

vising a critical analysis of a portion of the College Intelligence Test being prepared under the auspices of the National Research Council.

On March 11 Dr. Edwin H. Reeder spoke before the New York Chapter of the Visual Instruction Association of America. His subject was "The Use of Maps and Textbook pictures in Geography."

The McCall Speller has recently been published by Laidlaw Brothers of Chicago.

HISTORY

Professor J. Montgomery Gambrill spoke at the meeting of the National Council for the Social Studies held in Washington on February 20, and attended the meetings of the executive committee and board of directors of that organization.

February 26-28 Professor Gambrill attended in Chicago the meetings of the committee appointed by the Commonwealth Fund to supervise the investigation of the teaching of the social studies in state normal schools and state teachers colleges.

HORACE MANN SCHOOL

A New Course in Elementary Science

The new course of study in science for the Elementary School, in its tentative form, has been placed in operation. This course is subject to constant revision as curriculum studies now in progress are completed. Other schools are assisting the Horace Mann School by using the course in its tentative form and by gathering data needed for the curriculum studies.

The following classes of specific objectives have been considered in selecting the materials: natural phenomena which challenge children, as determined by studies now under way; conceptions or generalizations derived from the field of science which have greatly modified thinking in many fields; scientific information essential to effective social life. These objectives are analyzed into elementary component parts.

A tentative grade placement is given for all materials. Objective tests will be administered soon in order to determine the accuracy of the tentative placement. An organization is attempted in the grade placement program which allows for accumulative grade growth in science.

Mr. Gerald Craig has been assisted in this work by the coöperation of the Bureau of Elementary Curriculum Research and by Teachers College students of Elementary Education who were interested in science. The latter group analyzed related fields of subject matter taught in the Horace Mann Elementary School to secure maximum integration between science and other subjects at their contact points.

Miss Jean M. Betzner has been granted a leave of absence for the second half year, during which time her work in the first grade will be carried on by Miss Bonnie M. Mellinger.

Mr. Roy W. Hatch is also absent on leave. For the balance of the school year his High School classes in civics will be conducted by Mr. Vincent Clark.

HORACE MANN SCHOOL FOR BOYS

For the past two years, a new departure in the teaching of English composition has been tried out in the first year of high school work at the Horace Mann School for Boys. This is the only year in the course which stresses composition more than the study of literature. It is necessary that an adequate foundation be laid for the

successful practice of effective writing throughout the succeeding three years of the high school course; and it has been found in the past that the formal study of rhetoric has not had this desired effect. The use of a set text, like most ready-made shifts in teaching, proved both inexpedient for the teacher, and deadly to the pupil. Yet the few fundamental principles of rhetorical nature which are universally understood and applied by all good writers must be presented in such a way as to become a part of the pupil's instinctive equipment for self-expression.

It is not possible in the short compass of this brief notice to do any more than suggest the manner in which the problem is being worked out. Briefly, the following method of procedure is employed. In order to present the actual theoretical matter, mimeographed sheets are prepared for each assignment in composition. In the preparation of these mimeographed assignment sheets, the needs and interests of the various classes are considered, and the assignments varied sufficiently to appeal directly to each particular group. The boy feels this element of individual thought, and responds with a larger measure of creative effort than when given a cut and dried assignment from a printed text. It appeals to his innate love of building something, for he can save his assignments and make from them and his own notations derived from discussion in class, a very comprehensive textbook of rhetoric which represents what he has actually worked out for himself. "'Tis a poor thing, but mine own, sir"—and therefore it sticks.

Class assignments in reading may be correlated with the written work by such a method. There are many mimeographed sheets which deal entirely with the books studied, relating them to the work in composition. For instance, stories from Irving may be made the basis for study of the effective development of plot in narrative, or of the synthetic study of description as a form of discourse. The study of Bible narratives involves certain difficulties which can best be cleared up by the use of mimeographed sheets. Sheets are also prepared for reviews at intervals, which contain blanks to be filled out by the pupil, and preserved for reference as a compendium of the material covered. These various uses of the mimeographed assignment sheet make it a very useful means of presenting the material in a course in composition and rhetoric, and connecting it in such a way with the practical application of the principles that it becomes a more permanent, though more fluid, instrument than the customary textbook.

The experiment with self-administered study halls, which has now been under way for some five weeks, is proving in every way eminently satisfactory, and is constantly demonstrating the fact that it is possible to direct the natural tendencies of high school students in such a way as to make for the best good of the whole group. It is hoped that a more detailed report of the methods employed in this experiment may later be published.

The Horace Mann School for Boys has entered the oratorical contest which, in this section, is sponsored by the *New York Times*. Additional interest has been given to the contest by the offering of a prize by one of the school clubs to the winner and second place man in the school elimination trials. The prime movers in this whole project have been the Tiberian Club, members of which are offering the prizes, under the direction of Mr. Walter I. Metcalf, the faculty adviser of this club.

HOUSEHOLD ARTS EDUCATION

Professor Anna M. Cooley attended the meeting of the Executive Committee of the American Home Economics Association held at Washington in February. Professor Cooley also visited Ithaca during Farmers' Week and spoke at one of the morning meetings of the Home Bureau Conference.

As president of the New York State Home Economics Association, Professor Cooley recently visited Elmira, Schenectady, Albany, and Poughkeepsie. In April Professor Cooley will visit Syracuse and Springfield, Mass., where she will speak at conferences of the Eastern Arts Association and the Massachusetts Home Economics Association.

Professor Cora M. Winchell attended the meeting of the Department of Superintendence at Washington February 20-25. She also attended the Executive Committee meeting of American Home Economics Association and the meeting of the N. E. A. Committee on Behavior Problem Children, of which she is a member.

February 26-27, Professor Winchell conducted conferences of negro teachers of home economics under the auspices of the State Department of Vocational Education, at Winston-Salem Teachers College, Winston-Salem, N. C. The conference was called by Miss Margaret Edwards, supervisor of home economics of the North Carolina State Department of Vocational Education.

Professor Winchell spoke before the Western New York State Home Economics Association on March 27 at Buffalo, N. Y. Her topic was "The Relation of the Family Group to Community Life."

LINCOLN SCHOOL

Dr. Otis W. Caldwell was present at the Washington meeting of the Department of Superintendence of the National Education Association and spoke at several meetings.

Dr. Charles W. Finley, principal of the High School, addressed the Elementary Science Meeting at Washington, D. C., on February 20, on the "Advantages and Disadvantages of a Sequential Program in Elementary Science." Dr. Finley is a member of the executive committee of the National Counsellors of Nature-Study and Gardening for the next year.

Mr. Gordon R. Mirick read a paper before the National Council of Teachers of Mathematics on February 20. His topic was "Elementary Courses in Mathematics for the Senior High School."

Mr. Earl R. Glenn presented before the Educational Research Association a paper on "A Preliminary Study of the Permanence of Learning in High School Chemistry." Mr. Matthew Willing presented before the same association a report of the study in junior high school English composition.

Dr. Daniel C. Knowlton has written an article appearing in the *Fourth Year Book of the Department of Superintendence,* entitled "A Unit Course in Social Studies, Grades Seven to Twelve."

MUSIC EDUCATION

Three members of the Music Education staff attended the Washington meeting of the Department of Superintendence—Miss Bivins, Mr. Church, and Professor Dykema. In addition to general community singing, which was entered into heartily by the more than one thousand loyal Teachers College alumni at the banquet, there was a splendid rendering of the new Teachers College song. The solo part was sung by Miss Bivins, and the orchestra of twenty-five, which had been recruited from the faculty and students of the Washington schools, was directed by Mr. Church.

At the Washington meeting Professor Dykema presided at a gathering of supervisors who discussed the possibility of forming a group that should assemble at the time of the Superintendence Meeting for the purpose of discussing administrative aspects in music education. It was pointed out that at present these problems are scarcely touched upon at any of the music gatherings and that superintendents who do not go to conferences devoted to music might welcome the possibility of attending a music meeting held in connection with their regular mid-year convention. The whole matter of such a group will be discussed at the April meeting of the Music Supervisors National Conference in Detroit.

Plans are under way for the second annual celebration of Music Week at Teachers College. As was the case last year, this will be in charge of the class in Community Music. This same group directed the Christmas week celebration at the College.

One of the unusual courses conducted at Teachers College is that given by Dr. Willem van de Wall, of the Bureau of Mental Health, Department of Public Welfare of Pennsylvania, on the first and third Saturdays, on the subject of institutional music. Since the beginning of the course in October there have been several calls from institutions for qualified workers. It is probable that at least two of the members of the group will enter upon this work in the summer or fall of 1926.

The preliminary announcement for the 1926 Summer Session lists seventy-three courses in music, of which ten are given at Columbia University and sixty-three in Teachers College. This makes a rich offering which covers to an unusual extent the problems in the field of music education.

As part of the music equipment there has been established as a permanent exhibit in Room 118 Teachers College a fine display of brass instruments. These represent the best products of two of the leading manufacturers. There has also been purchased for use of the band and orchestras at the two Horace Mann Schools a goodly supply of the rarer instruments of the orchestra. There are now in the various instrumental classes and groups over two hundred and fifty different students performing on band and orchestral instruments.

NORMAL SCHOOL EDUCATION

On February 11 the International House was the scene of a delightful dinner tendered Professor William C. Bagley by the members of the Teacher Training League in honor of his return from his year's absence. Mr. Chandler presided as toastmaster and toasts were given by Professor Evenden, Miss Stroh, Mr. Bennett, and Mr. Fuller. Professor Bagley responded very feelingly and spoke briefly on some of the most significant impressions of his past year's travel.

Professors Bagley, Evenden and Mead all attended the sessions of the Department of Superintendence at Washington, D. C., during the week of February 18 to February 25 inclusive. On February 23 Professor Bagley addressed the City Training School Section on "The Reconstruction of City Training School Curricula." Professor Evenden spoke before the American Association of Teachers Colleges on February 19 on "What Courses in Education Are Desirable in a Four Year Curriculum in a State Teachers College? What Should Be Their Scope?" On February 23 Professor Evenden appeared before the National Council of Education, speaking on "Some Criteria for the Construction of Curricula for Teachers Colleges." Professor Mead made the report of the Committee on Research for the year

1925 to the Supervisors of Student Teaching on February 23, and Miss Rosamond Root, formerly a member of the departmental staff, spoke before the same organization on "The Outcomes of Supervised Student Teaching."

A convocation of Kappa Delta Pi followed the meetings of the Department of Superintendence, and Professor Bagley addressed this organization. Mr. Robert Steele was appointed delegate of the local chapter to the meeting in Washington.

Professor Evenden was recently invited to Trenton to attend a conference of the normal school presidents of New Jersey. The conference was called for the purpose of discussing proposals for the extension and revision of the state's program for the preparation of its teachers. Some city superintendents and others interested in the training of teachers were also present. This is one of a series of such conferences.

On March 2 President Sprague of the State Normal School, Montclair, N. J., addressed the members of the class in Student Teaching on the "Montclair Plan of Student Teaching."

The Teacher Training League recently elected officers for the second semester. The officers chosen are as follows: President, Mr. H. G. Bennett; vice president, Miss Clara L. Robinson; secretary, Miss Lydia Jacobs; treasurer, Mr. W. P. Percival.

Among the students in normal school education who attended the meetings in Washington were Messrs. Percival, Steele, Bennett, Fuller, Akrawi, Frazier, and Tate.

NURSING EDUCATION

The first lecture from the Annie W. Goodrich Lecture Fund (contributed by the students and alumnae of the department) was delivered by Dr. George E. Vincent, president of the Rockefeller Foundation on Thursday, February 18, in the Horace Mann Auditorium. The lecture, which was suggestive and stimulating and at the same time remarkably entertaining, was on the subject of "The Public and the Nurse."

The Nursing Education alumnae met on Friday morning, February 19, for a special session and also had luncheon together at International House. Dr. Robert J. Leonard, director of the School of Education, discussed the modern tendencies in professional education and the possibilities of the junior college movement in relation to such vocations as nursing. Miss Carolyn Gray and Miss Stewart discussed the development and possible modifications of the five-year combined academic and professional course in nursing and this was followed by brief talks by Miss Amelia Grant, Miss Alta Dines, and Miss Helen Boyd on the place of public health nursing in the combined course. A number of alumnae were present not only from New York and vicinity, but from cities as far distant as Baltimore, Cleveland, Cincinnati, and Boston.

The department of Nursing Education has recently prepared a special bulletin entitled "Twenty-five Years of Nursing Education in Teachers College." It outlines the history and growth of the department and especially recent developments in the different divisions of its work. Copies are being sent to all former nursing students who have completed a year of work in the College and whose addresses are on file. Others who would like copies may apply to the office of the department.

Miss Muse attended the Boston Institute for Supervisors and Teachers in Nursing Schools, March 12 and 13, and gave two talks on "The Teaching of Psychology to Nursing Students."

Miss Stewart has been appointed as a member of the Nursing Council of the

New York Department of Health Bureau of Hospitals, and also as a member of the Training School Committee of the Johns Hopkins Hospital School of Nursing.

PHILOSOPHY OF EDUCATION

Professor William H. Kilpatrick gave the talk on education in the series representing the different departments of Columbia University which is being broadcast from WEAF.

Professor Kilpatrick spoke before the Kindergarten Association in Rochester, N. Y., on February 16. He was the principal speaker at the meeting of the Teachers College Club in Philadelphia on February 20, speaking on the subject, "A Visit to an English Public School."

Dr. Kilpatrick gave the Kellogg lectures at Rutgers University on March 2, 16, and 30. The subject of the series was "Education for a Changing Civilization" and the lectures will later appear in book form.

PHYSICAL EDUCATION

Professor Thomas D. Wood addressed the Parent-Teachers Association at Millburn, N. J., on February 16, on "The Community and Child Health."

During the convention meetings of the National Education Association at Washington, February 23-26, Professor Wood conducted the annual meeting of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, of which he is chairman. He also acted as chairman of the Health Program presented in the general meeting of the National Council of Education, on the afternoon of February 23.

Professor Wood was entertained as guest and spoke at a dinner meeting of sixty people interested in health, physical education, and playground activities, at the Cosmos Club of Washington on the evening of February 25. He presented some of the outstanding ideas of the convention programs, pointing out the application of these ideas to the fields of health and physical education.

Dr. Jesse F. Williams has been giving a series of lectures to the teachers of the East Orange, N. J., public schools. On March 22 he lectured at Skidmore College, Saratoga Springs, N. Y.

The men taking work in Physical Education hold a get-together meeting on the second Tuesday of each month. The group has no name and no organization other than the fact-totum. They meet at some interesting point for supper and discussion. At present two papers are presented at each meeting by members of the group. These papers are then printed in some educational journal. If the enthusiasm of the group is an indication, these meetings are a rare treat. Alumni men who would like to participate should get in touch with Dr. Williams.

RURAL EDUCATION

The Rural Club held its first meeting for the spring semester on February 12 in the Horace Mann auditorium. The subject was "India." Mr. W. J. McKee and Dr. Harry F. Ward presented a very interesting discussion. Mrs. J. J. Cornelius, attired in native costume, portrayed a very illuminating picture of "The Education of Women in India." Mr. S. G. Krishnayya did some of his magic tricks, and Mme. Ragini Devi entertained with her delightful singing.

Mr. W. J. McKee was elected president for the coming term. Mr. Theodore E. Sexauer was re-elected vice-president. Mr. George W. Rosenloff was appointed secretary, and Mr. Walter Vance treasurer.

Among the many new students reg-

istered for the spring semester are: Miss Hilda Hughes, formerly county superintendent at La Grange, Ind.; Miss Wil Lou Gray, Adult Education Specialist, State Department of Education, Columbia, S. C.; Miss Maysie K. Southall, State Rural Supervisor, Department of Education, Raleigh, N. C.; Miss Grace M. Anderson, supervising teacher, Cecil County, Md.; Miss Ida R. Hedke, of Union Grove, Wis.; and Miss Minnie McKie Smith, of Georgia. Mr. Albert S. Blankenship, of the State Teachers College, Commerce, Tex., has returned and is now working on his Doctor's dissertation, as is Mr. McKee.

Miss Nora Hackley was recently appointed head of the department of rural education in the Central Missouri State Teachers College, Warrensburg, Mo.

SECONDARY EDUCATION

At a meeting of the Secondary Club on February 25 a new president and secretary were elected to replace the officers who have left the College to enter the teaching field. Mr. Harlan H. Miller as president succeeds Mr. Chandler T. Jones, who has accepted a position as head of the English department in the Suffield (Conn.) School, and Mrs. Marguerite P. Culp has been elected secretary in the place of Miss Juanita Vail. The other officers are Miss Phebe Lewis, vice-president, and Mr. James D. Howlett, treasurer. Following the business meeting a program of readings in poetry was presented by several members of the club.

During March a group of students in the major course for high school principals and the major course for heads of departments and supervisors in high school visited several nearby schools to observe individualized instruction under the Dalton Plan. They have made interesting observations in the Children's University School in New York City and at Scarsdale and Bronxville. The group is planning to spend a day in the South Philadelphia High School for Girls, of which Dr. Lucy L. W. Wilson is principal.

On March 5 Professor Franklin W. Johnson addressed the teachers of Titusville, Pa., on a subject dealing with methods of teaching in high school.

At the March meeting of the Secondary Group Dr. J. C. Hart, of the editorial staff of *The Survey*, presented an account of the Danish folk schools which he observed on his visit to Europe.

On March 2 thirty members of the major course for high school principals spent the day at Hackensack, N. J., visiting the High School and becoming acquainted with its organization. Principal Edward T. Marlatt explained the system of records employed in his school and distributed illustrative material to the students.

The group of prominent Mexican educators sent to Teachers College by the Minister of Education of Mexico has completed a series of conferences and directed observations in the high schools of the vicinity of New York. Professors Briggs, F. W. Johnson, Fretwell, and Symonds met with the students a number of times to discuss problems of secondary education.

At the annual meeting of the Department of Superintendence Professor Briggs addressed the members of the Society of College Teachers of Education on "Needed Research in Secondary Education," a discussion of which appears in the February number of *School Life*. The topics which he presented are in a forthcoming issue of *Journal of Educational Research*. Professor Briggs was also on the program of the National Association of Secondary School Principals in the junior high school section, of which Mr. Truman

G. Reed, principal of the Central Intermediate School at Wichita, Kan., and formerly a student at Teachers College, was chairman. The subject of his address in this department was "A Neglected Phase of the Curriculum."

TEXTILES AND CLOTHING

Miss Rosamond C. Cook, graduate student in Household Arts, was awarded in January the $1000 prize offered by Bonwit Teller and Company, New York, for the best essay on "What Does a Woman Desire in Dress?" Miss Cook's essay follows:

What does a woman desire in dress? I know what I want, but are my desires like those of other women? I decided to ask and this is the record of what they have told me. Varied were the ways of telling and various were the desires expressed, but running through all were certain ideas so emphasized that I believe they must be fundamental. These I am calling the "rule of the four Ps."

The first of the Ps is Personality. In dress itself, but not in dress alone. The dress should harmonize with and accent the personality and individuality of the wearer. Garment and person should be a unit. We do not wholly love the friend who says, "What a beautiful dress!" A happier remark is "How well that dress suits you!" since it does not show a separation between dress and wearer in the mind of the observer. Even the most self-effacing of us like to be recognized for ourselves and not as the player of the rôle of manikin. So our first desire is for garments which express and interpret us as persons and individuals.

The second of the Ps is Purpose. We are appreciating more and more the value of a garment which has been so designed that it quietly, but effectively, fits the spirit of the purpose and the occasion for which it is used. Each activity has its own delights and demands, and its value is increased by clothing which has the comfort and beauty that entire fitness to the purpose alone can bring.

And the hunt for clothing which suits personality and purpose trails its inevitable way by the lair of the third P,—the Purse. To find clothing which suits one's individuality and the purpose is not so difficult, but to find these garments at prices that one can afford to pay, well—that's something else again! With the lowering of price, we expect to find a corresponding decrease in quality of materials, workmanship and fit. Too often though, we find an increase in elaboration of design and the use of trimmings. A plainer design with fair materials, workmanship and fit are nearer to the heart's desire and should be within the pocketbook of us all.

It is the Problem of the Purse that forces us to make use of the fourth P. This is a Siamese twin named Patience and Perseverance—and Patience and Perseverance will lead us eventually to the shop where designer, producer, buyer and salespeople all recognize the four Ps in a woman's way of spelling "desire in dress."

THE FORUM

The Forum is a new organization formed among the students of Teachers College. It grew out of a felt need on the part of a group of students for a medium through which they might give expression to their views on current questions of a controversial nature, in the fields of economics, politics, and sociology—particularly as such questions affect racial attitudes and relationships. The purposes of The Forum are to furnish a medium for the discussion of such questions; to stimulate inquiry into and study of the causes and possible solutions of such problems; and to disseminate information among its members.

Those most active in launching The Forum are: H. H. Fuller, D. S. Myer, Ian Ross, G. W. Rosenlof, Miss Nora E. Hackley, Miss Amalia M. Bengtson, and Miss Helen H. Heyl. These students were assisted by Professor Mabel Carney, chief sponsor of the new organization. Membership in The Forum is open to all student and faculty members of the College and the University and its affiliated schools.

The first public meeting of The Forum, held on November 30 in the Horace Mann auditorium, was on China. Messrs. Jerome T. Lieu, Tai Lai Lee, C. W. Chiu, and C. Y. Chen, represent-

ing the Chinese Students Club of the University and the Chinese Students Alliance of the United States, gave short talks on various aspects of the present situation in China. Professor John Dewey spoke on the attitude and relationship of the United States toward China.

On December 8 The Forum held a public meeting on the World Court. Mr. Winter Russell, former District Attorney of New York City, gave a splendid address in support of the Court.

The governing body of The Forum is an executive committee composed of W. C. Atkins (South Africa), Miss Amalia M. Bengtson (Hector, Minn.), R. J. Hawkins (Fayetteville, N. C.), H. H. Fuller (Ann Arbor, Mich.), and Miss Helen H. Heyl (University, Va.). In addition to the executive committee there is an advisory board on which the following faculty representatives have accepted membership: Professors William Russell, John Dewey, Mabel Carney, Harold Rugg, Harry Ward, Mary Townsend, F. G. Bonser, and D. H. Kulp.

MARY EVERETT RANKIN

It is with deep regret that we announce the death of Mary Everett Rankin, who was for twelve years a member of the Kindergarten—First Grade staff.

Miss Rankin first came to Teachers College as a student in 1911, obtained the B.S. degree in 1913 and remained as a member of the staff. Her work was with the children of the kindergarten and with the students in Kindergarten Education and Religious Education. She was instrumental in organizing the kindergarten group of the Union Seminary Sunday School and her book, *A Course for Beginners in Religious Education,* is used in church schools throughout the country. In connection with her work in playground organization Miss Rankin conducted an experimental playground at Teachers College, and at the time of her death had almost completed a book embodying the results of this experiment.

Last September Miss Rankin was chosen to be in charge of one of the nursery groups of the Institute of Child Welfare Research. She was able to organize and start the work, but was taken ill in December. After several weeks of illness she was granted a leave of absence to go abroad for complete change and rest. A few days before she should have sailed she became seriously ill, and died at the Presbyterian Hospital on Wednesday, February 24.

All those who knew Miss Rankin remember her especially for her fine spirit of friendliness and her sympathetic interest in other people's problems. One of the finest tributes has come from the mothers whose children she taught in Sunday School and in kindergarten. These mothers have spoken of her unusual ability to understand their problems and to give them helpful suggestions.

The news of Miss Rankin's death will come as a real sorrow to those who came in contact with her through her kindergarten or college work. Her loss is felt particularly by her co-workers and her many friends on the College staff.

ALUMNI ACTIVITIES

THE TEACHERS COLLEGE ALUMNI ASSOCIATION

OFFICERS

President: Mr. ZENOS SCOTT, Superintendent of Schools, Springfield, Mass.

First Vice-President: Dr. FANNIE W. DUNN, Assistant Professor of Education, Teachers College.

Second Vice-President: Dr. BESSIE LEE GAMBRILL, Professor of Education, Yale University, New Haven, Conn.

Recording Secretary: Miss AGNES BURKE, Instructor, Kindergarten Education, Teachers College.

Corresponding Secretary: Mrs. EDITH SWAN MOREY, Camp Hill, Pa.

Treasurer: Dr. R. G. REYNOLDS, Director, Bureau of Educational Service, Teachers College.

Members-at-Large: Mr. FRANK PICKELL, Superintendent of Schools, Montclair, N. J.

Miss ANNIE GRACE, 300 Park Avenue, Baltimore, Md.

Miss MARION SHERIDAN, 711 Orange Street, New Haven, Conn.

Alumni Trustees: Dr. EDWIN C. BROOME, Superintendent of Schools, Philadelphia, Pa.

Miss MERCY J. HAYES, 1063 Beaconfield, Grosse Pointe Park, Detroit, Mich.

Alumni Office: Russell Hall, Teachers College, 525 West 120th Street, New York City.

Address all communications to Rollo G. Reynolds,
Field Secretary, Teachers College, New York City.

TEACHERS COLLEGE DINNER AT WASHINGTON, D. C.

The annual alumni dinner of Teachers College was held in Washington, D. C. on February 24, at the Mayflower Hotel. Early in the evening Alumni from all parts of the United States began to gather in the lobby of the hotel, and when the gavel of the toastmaster struck the first sound eleven hundred loyal sons and daughters of the College were seated at the tables. The Alumni, as usual, represented all parts of the country and several foreign lands. They also represented all lines of educational work.

At the conclusion of the dinner Dr. Henry Suzzallo, president of the University of Washington, called the group to order. He introduced to the Alumni Mr. E. E. Oberholtzer, superintendent of schools, Houston, Tex., who was followed by Professor Ella Victoria Dobbs, of the University of Missouri, Columbia, Mo., who spoke for the Alumnae. Having thus disposed of the Alumni in the

field, Dr. Suzzallo turned to the members of the faculty. He introduced first of all Dr. Frank M. McMurry, with the announcement that Dr. McMurry's active years of service in Teachers College would be completed this year, after which he will take a year's leave of absence before he retires from the College. The affection and respect which the Alumni feel for Dr. McMurry was indeed expressed by the tremendous ovation which they gave him as they all rose to their feet to pay him honor.

Dr. McMurry spoke most happily, giving many reminiscences of his long years at Teachers College, and expressing the pleasure and happiness which these years had brought to him.

The toastmaster then introduced Dr. Edward L. Thorndike as celebrating his twenty-five years of service at Teachers College. Dr. Thorndike in turn received tremendous applause, and the large group of eleven hundred Alumni rose to express their affection for him. His after-dinner speech was delightful in its keen humor, and he closed his remarks with a serious discussion of some of the problems which face Teachers College. The principal speaker of the evening, and the one for whom, after all, every annual Alumni gathering waits was Dean Russell. He was introduced most graciously by Dr. Suzzallo, who paid him high tribute. The Alumni rose en masse to greet him. Dean Russell brought to the group words of warning, and words of sound advice. He was listened to with the greatest of interest throughout his speech. As the toastmaster dismissed the gathering there was a feeling expressed on every side that these eleven hundred sons and daughters of Teachers College had attended her greatest annual dinner.

FOR THOSE WHO ATTENDED THE TEACHERS COLLEGE DINNER IN WASHINGTON

FEBRUARY 24, 1926

The large attendance at the meeting of the Department of Superintendence of the National Education Association made it difficult for the hotels to secure a sufficient number of waiters. This was especially true on Wednesday evening, February 24, when all of the college and university dinners were held. Some of those attending the Teachers College dinner were compelled to wait for service and some others received incomplete service.

The management of the hotel very greatly regretted its inability to maintain the standard of service for which they are distinguished. On this account they refunded the sum of $1018 which has been placed in the treasury of the Teachers College Alumni Association. If any individual who attended the dinner should desire a refund on account of the failure of the hotel to provide the dinner for which the ticket was purchased, such refund will be made upon application to the treasurer of the Alumni Association, Dr. R. G. Reynolds.

THE ALUMNI HOME COMING DAY

February 19, 1926, will long remain in the memory of those Alumni of Teachers College who were fortunate enough to return and do honor to Dr. E. L. Thorndike on his twenty-fifth anniversary of service at Teachers College. The largest representation of Alumni in many years spent the morning visiting classes and renewing their acquaintance with professors of the College. At twelve o'clock the Alumni Council held its luncheon, which is reported elsewhere in the Alumni Notes. In the afternoon at two o'clock in the

Horace Mann auditorium the general meeting of the Alumni Association was held. Dr. Zenos E. Scott, superintendent of schools, Springfield, Mass., and president of the Alumni Association, presided. The theme of the afternoon was "The Contribution of Psychology to Education." The Association was very fortunate to be able to have as its guest, Dr. Charles H. Judd, director of the School of Education of the University of Chicago, who spoke on "A Century of Application of Psychology to Education." The second address of the program, entitled "The Contribution of Psychology to Child Welfare," was delivered by Dr. Agnes Rogers, professor of education at Bryn Mawr College, and former alumni trustee of Teachers College. At this point, under the direction of Professor Peter Dykema, the new prize Teachers College song was introduced to the Alumni. It met with their most hearty approval, and they joined in singing it with enthusiasm.

For the Alumni of the College the culmination of the program came when the president introduced Dr. Thorndike. To say that he received an ovation would be putting the case mildly. After a few delightful remarks voicing his appreciation of this celebration in his honor, Dr. Thorndike delivered an address on "The Psychology of Adult Learning."

Following the afternoon program Dean and Mrs. Russell gave a reception to the Alumni in the Kindergarten room, and the day's celebration ended with a testimonial dinner given by the faculty and intimate professional friends of Professor Thorndike at the Faculty Club. An account of this dinner is found on page 742.

ALUMNI COUNCIL LUNCHEON

The Alumni Council luncheon was held at the Men's Faculty Club at noon, February 19. Those present were the executive committee of the Alumni Association consisting of Dean Russell, Dr. Zenos Scott, president, who presided, Dr. Fanny Dunn, first vice-president, Dr. Bessie Lee Gambrill, second vice-president, Dr. R. G. Reynolds, field secretary and treasurer, Miss Katherine I. Sherwin, general secretary, Mr. Frank Pickell and Miss Marion Sheridan, members-at-large, Dr. Edwin C. Broome and Miss Mercy J. Hayes, alumni trustees, and Miss Ellen Woodbridge, stenographer. Absent members were: Miss Agnes Burke, recording secretary, Mrs. Edith Swan Morey, corresponding secretary and Miss Annie Grace, member-at-large. Club representatives present were: Connecticut, Miss Maude Keator and Mr. A. D. Simpson; California, Dr. Jesse Burks; Maryland, Dr. David Weglein, Miss Mary E. Davis, and Miss M. Katharine Cox; Michigan-Ann Arbor, Miss Edith Bader; North Carolina, Dr. M. R. Trabue; Ohio-Cleveland, Miss K. A. McCarty and Miss Edith F. Erickson; Ohio-Kent, Mr. W. A. Walls; Vermont, Mrs. Alice C. Sies.

In order that the full two hours might be given to the speakers in the general meeting at 2 o'clock it was decided that the business session of the Alumni Association be held in connection with the Alumni Council luncheon. Dr. Scott, therefore, asked for reports from the field secretary and treasurer, Dr. Reynolds, from the retiring alumni trustee, Dr. Broome, and from the various clubs represented. At the conclusion of these papers Dean Russell commented briefly upon Dr. Broome's report. The meeting then adjourned to attend the program in the Horace Mann auditorium.

The reports of Dr. Reynolds and Dr. Broome are printed below.

REPORT OF THE ALUMNI TRUSTEE

My term of service as alumni trustee closes with the next meeting of the Board of Trustees. And, in accordance with a custom established when the office of alumni trustee was first instituted, I hereby submit my report.

Every college receives some of its support, and much of its encouragement and strength, from its alumni. This is peculiarly true of a strictly professional college, like Teachers College, whose alumni are all members of one and the same profession, and whose alumni owe their success in a large measure to the instruction and the inspiration which the College gave them.

The alumni of Teachers College are a remarkably loyal body. This attitude of the alumni of Teachers College is the more extraordinary because of the fact that large numbers of the alumni, possibly the majority, already owed allegiance to some other college before becoming students in Teachers College. Of all the college dinners that are held at the time of the meeting of the Department of Superintendence, the Teachers College dinner is always by far the best attended, the most enthusiastic, and the most significant.

To keep this great body of alumni actively interested in Teachers College, and to make the College increasingly serviceable to the alumni, is our perennial problem.

So much thought has been devoted to this problem that it would seem that the possibilities were well-nigh exhausted. There is no subject, however, of more interest to the alumni than that of the relations of the alumni to the College. So, as alumni trustee, I feel called upon to venture a few suggestions on this subject.

My first suggestion is that the term of the alumni trustee should be extended to four years.

During a two-year term the alumni trustee has the opportunity of attending only eight meetings of the Board; in fact, he or she has attended at most only six meetings by the time it is necessary to prepare the final report. Most of the alumni trustees will usually be men and women who have been away from the College many years, and who are leading such busy lives that it is impossible for them to be as fully informed as they should be of the progress of the College to render the best service in a brief term of two years.

I find this to be true in my own case; and all former alumni trustees whom I have consulted on this subject are of the same mind.

Second, it would be well, I believe, to have more than two alumni on the Board at one time. Some prominent alumni have suggested three; others have suggested four—one to be elected each year for a term of four years. Four would not seem too many, when you consider the large number of alumni and their wide geographical distribution. In the case of four alumni trustees, probably two should be men, and two women.

Third, it would seem advisable, in order to keep alumni contacts constantly alive, to employ as a member of the faculty a director of alumni activities, who would devote his or her entire time to the work. Such officer should have no class assignments, or clerical duties; but should be free to serve either at the College or in the field. He would be of great assistance in helping to organize alumni associations in different parts of the country, in carrying the message of the College to alumni groups, and in bringing back to the College alumni opinions of college policies. This field of service is partly covered now,

and ably, so far as it goes; but there would seem to be sufficient service to require the entire time of one officer.

Fourth, the College could be of great assistance to the alumni in the field by helping them to solve their educational problems. If the alumni could be induced to send their practical problems to the College for assistance, not only would they be materially helped, but there would be a constant supply of valuable material for research, case study, and field work for students in the College.

Such assistance is already being given to some extent; but, if this branch of the college service could be thoroughly organized, and directed through some such central office as that of *director of alumni activities,* it is reasonable to expect that its value would be such that many communities and institutions would make appropriations for such service, and greatly assist in meeting the expense of the service.

Fifth, our alumni body is now so large and so widely distributed that it would seem desirable to establish an alumni advisory council. The membership of such a council might properly be composed of representatives from organized alumni groups in different parts of the world. The members might be selected by local groups of alumni in such large centers as Boston, Washington, Philadelphia, Pittsburgh, Cleveland, Chicago, Des Moines, St. Louis, Minneapolis, Denver, New Orleans, and San Francisco.

The Council would keep in constant touch with the College through the *alumni office.* The advisory council might meet at the time of the annual meetings of the Department of Superintendence and the National Education Association. From this source, also, might come much valuable material for the *Teachers College Record.*

Sixth, an annual problem is that of making the spring alumni conferences as valuable as possible to the great body of alumni. As our body of alumni increases and becomes more widely distributed, conferences held in New York will be attended by an increasingly smaller proportion of the entire body. This is not intended as an argument for discontinuing the New York conferences. They are very valuable; and their influence is extensive.

As a supplement to the New York conference, there might be simultaneous Teachers College conferences held in several large centers in this country, and even in foreign countries. These conferences might be arranged by members of the *advisory council,* should such a council be established. One of the features of such world-wide conferences might be the exchange of greetings between the conference groups and the College so that at a given time of each year the alumni all over the world would be thinking of their college, and of one another, while conducting programs on a high professional plane in keeping with the ideals of Teachers College.

Seventh, the extension work of Teachers College is exceedingly beneficial to the thousands who have the opportunity of availing themselves of it. It is limited, however, to the few miles which the professors may travel from their classrooms. It is possible, if feasible, to broaden the extension work to an almost unlimited extent by giving Teachers College credit for courses given in various parts of the country by selected alumni, or other distinguished educators, provided a sufficient number enroll in the courses to make them profitable. By this plan many students might be encouraged to commence professional courses under Teachers College supervision who would not otherwise come under the influence of Teachers College;

and many students in distant places who were induced to take Teachers College courses in this way would later come to the College to complete their courses. Probably it would be advisable to have such courses given in places which are remote from state universities and other universities that now give satisfactory courses in education in order to avoid competition with such institutions. Of course, such a plan would greatly increase the enrollment in Teachers College in a few years. But the demand for trained leadership in education is limitless; and, as Teachers College has been able to meet every need in the past, there is reason to believe that Teachers College will arise to all future opportunities.

Possibly you will not find any of these suggestions practicable. It has been a source of great satisfaction to me, however, to have had this opportunity of making them.

It has also been a pleasure to have associated with the members of this board during my term as alumni trustee.

Your attitude of respect for and confidence in our dean is most gratifying to me who as a former student and as an alumnus for nearly a quarter of a century has known of, and has recognized Dean Russell's masterful leadership of the College and of his distinguished service to the cause of education.

Respectfully submitted,
(Signed) E. C. BROOME
Alumni Trustee

REPORT OF THE FIELD SECRETARY

TO THE MEMBERS OF THE TEACHERS COLLEGE ALUMNI ASSOCIATION:

I herewith submit my report as Field Secretary for the current year.

The membership in the Alumni Association has remained about the same. During the year we have enrolled about 5,000 different members.

Most of the interest of the Alumni during the past year has seemed to center in the meetings of local clubs. A large number of meetings were held throughout the country, and about twenty members of the faculty have met with groups from Vermont to California. Two new clubs have been given charters: the Teachers College Club of Kent, Ohio, and the Teachers College Club of Akron, Ohio.

The correspondence of the Association has been carried on in the office of the Alumni Association in Room 119 Russell Hall. This work has been supervised by Miss Katherine I. Sherwin, who is the secretary of the Student Organizations in Teachers College, and assistant to the Field Secretary in charge of the Alumni office.

The officers of the Association feel particularly proud of the alumni notes which have been appearing during the past year in the *Teachers College Record*. The most outstanding of these perhaps was the reproduction of Dean Russell's portrait and the Tablet dedicating Russell Hall, together with the dedicatory speeches. We are very happy to announce the adoption of an official song to Teachers College. This song has been printed, and the Alumni office has a quantity of copies on hand. The office will be very happy to send to any local club or any gathering of Teachers College students sufficient copies to meet their needs.

I find it necessary to report that there seems to be very little interest this year in the Alumni elections. It was with some difficulty even that nominations for the office of Alumni Trustee, and the Association officers were secured. At first thought it might seem that this is due to the fact that the election blanks and ballots are printed in the *Teachers*

College Record instead of being sent directly to the members of the Association as in the past years. Yet, on the other hand, the election of officers was carried on in the same manner last year and the result was a very splendid showing of names and an extremely good ballot.

It may be necessary for the officers of the Association to take up this problem and see what causes this apparent lethargy on the part of members.

With your permission may I include the Treasurer's Report?

Teachers College Alumni Association
Treasurer's Report
February 5, 1925 to February 1, 1926

Feb. 5, 1925, Balance on hand ..	$ 913.88	
Feb. 5, 1925 to Feb. 1, 1926, Receipts ..	1559.72	
Total credits for 1925-26		$2473.60
Expenditures:		
Salaries	728.96	
Printing, etc.	198.61	
Postage and supplies	31.62	
	959.19	
Miscellaneous	362.20	
Total expenses ..		1321.39
Feb. 1, 1926, Balance on hand		$1152.21

I wish to call again to the attention of the Alumni Council and the officers of the Association that my resignation as field secretary of the Alumni Association was tendered a year ago at this time. I would respectfully request that the Association give this resignation their immediate and careful consideration. I am willing to go on with the duties of the office until my successor has been elected, but I feel for the good of the Association that they should get someone to take my place.

Respectfully submitted,
R. G. Reynolds
Field Secretary

ALUMNI NOTES

Margaret Elizabeth Wells (Ph.D. 1921), director of the new Brookside School in Montclair, N. J., was the speaker at the evening meeting of the Primary Council, on October 29, her subject being "The Need for a Wider Use of the Manipulatory Instinct in Teaching Little Children." She addressed the second and the fifth grade teachers the next day on "Experimentation in Second Grade Education" and "Seeing Education through the Eyes of Fifth Grade Girls and Boys." On February 11 Dr. Wells spoke in their Assembly to the faculty and students at the State Normal School, Montclair, N. J., on the phases of project work developed in her dissertation.

Alice M. Hirst (B.S. 1923), after teaching art for two years in Springfield, Mass., has accepted a position as art supervisor at Maple Shade, N. J.

J. B. Sears (Ph.D. 1920) has just been appointed director of the Survey Commission to make a survey of the physical properties of the Berkeley, Calif., school system. He has recently been serving as special consultant on curriculum revision for the Oakland, Calif., school system.

Gertrude L. Carey (B.S. 1917) resigned as supervisor of art education in the public schools of Duluth, Minn., to accept an associate professorship in fine arts at the College of William and Mary in Virginia. The past two summers she taught art education at the summer sessions of the Cleveland School of Education and Western Reserve University, Cleveland, Ohio.

Cora B. Freeman (M.A. 1917) is principal of Mt. Vernon, N. Y., Junior High School.

Alice Louise Marsh (B.S. 1906), head of the English department in the Southwestern High School, Detroit, Mich.,

has recently published, through the Auditorium Press, "Parliamentary Law for Young People" and two plays for auditorium use, "The Bishop's Silver Candlesticks" and "Nathan Hale."

Florence A. Meyer (M.A. 1909) is supervisor of corrective and special classes in physical education in the Newark public schools, Newark, N. J.

Frances M. Hedden (M.A. 1920) is superintendent of the children's division of the New Jersey Council of Religious Education. She was a member of the faculty at the International Training School, Winnipesaukee, N. H., in the summer of 1925, and at the summer school of religious education at Auburn, N. Y., in 1925 and 1926.

Ethel L. Parker (M.A. 1922) is head of the department and professor of home economics education in Women's College, University of Delaware.

Jennie Whitney (B.S. 1913) has been in charge of the Woman's Exchange and Tea Room, Rockledge, Fla., for the past seven winters. This summer she will be assistant in charge of the dining room at Camp Idlewild, South Hero, Vt.

Bettie M. Tracy (M.A. 1925) is director of research in the public schools, Wheeling, W. Va. In December, 1925, the Board of Education reorganized the first four grades in the elementary school on the basis of the results from standardized tests given during the first semester, and authority was granted Miss Tracy to promote on the basis of these results. It was also decided to give a test to the 8A promotion class of the elementary school for purposes of classification in high school.

George Frederick Miller (Ph.D. 1916), who has been a member of the faculty in the University of Oklahoma, Norman, Okla, since 1920, was appointed by President Butler to represent Columbia University at the inauguration of President Bizzell at the University of Oklahoma, on February 5. Mr. Miller was instrumental in organizing the Teachers College Club in that state about four years ago.

Lindsay J. March (M.A. 1923) is finishing his third year as principal of Foxcroft Academy, Dover-Foxcroft, Me.

Carrie Edith Ricketts (M.A. 1920) is head of the department of English, State Normal School, Frostburg, Md.

Flora M. Thurston (B.S. 1919) has taken a position in the nursery school of the Teachers College Child Welfare Research Institute this semester.

Mordecai Soltes (Ph.D. 1925) was elected president of the Jewish Council of Greater New York at the convention of two hundred Jewish organizations held on January 10.

Sara B. Brumbaugh (M.A. 1921) has received the appointment of instructor in education at the University of Maryland, Hyattsville, Md. Her subject is the teaching and history of mathematics. She also has charge of the student-teachers in mathematics.

Frank Ellsworth, (M.A. 1924), director of the training school of the Western State Normal School, Kalamazoo, Mich., travelled in Europe on leave of absence during the first semester. He visited several teachers colleges in and about London, Leeds, and Paris, as well as many public schools.

Mary A. Kerr (M.A. 1922), supervisor of curriculum in Bloomington junior-senior high school, has resigned her position to enter the education department of the Rand, McNally Publishing Company. She has been connected with the Bloomington schools and Indiana University summer schools for the past twenty years.

Adda Eldredge (student 1915-16) is still director of nursing education of Wisconsin. In May she finishes her second term of two years as presi-

dent of the American Nurses Association. She was official delegate last July to the International Council of Nurses at Helsingfors, Finland.

Elizabeth R. McCormick (B.S. 1919), principal of T. O. Howe School (junior high and elementary grades) and a member of the State Annuity Board, of Wisconsin, was recently elected vice president of the State Teachers Association of Wisconsin.

Florence Anne Marsh (B.S. 1916) is director of auditorium, Hutchins Intermediate School, Detroit, Mich. She has been editing for the Auditorium Press a series of plays written especially for this phase of extra-curricular activities, which are designed to permit a large number of children to have the joy of dramatic expression.

Paul F. Voelker (Ph.D. 1920) is president of Battle Creek College, Battle Creek, Mich.

Robert L. Meeks (M.A. 1916) is principal of the new Warren G. Harding Junior High School, Lakewood, Ohio.

Elizabeth M. Barkley (B.S. 1915) expects to teach in the art department of the University of Colorado, Boulder, Colo., during the summer term of 1926. This will be the fourth year that she has taught at the University.

Maynard W. Booth (M.A. 1924) is director of the social and religious center of the American University, Beirut, Syria. His activities are connected with the initiation of boys' work and social service in Beirut. He is the only representative of Teachers College in the university.

H. D. Vincent (Summer Sessions 1914, 1915 and 1922) is co-author of *Twentieth Century Guide to Correct Pronunciation.*

Hirsch L. Gordon (student 1924-26) has recently been appointed principal of the National Hebrew School, Jersey City, N. J., instructor in Rabbinical Literature at the Jewish Teachers Seminary, New York City, and educational lecturer of the Workmens Circle of New York City. He is also in charge of the Hebrew educational bi-monthly *Shevilei Hahimuk,* which was reviewed by him in *Religious Education,* December, 1925.

L. R. DeLong (M.A. 1921, student of 1923-24), in the absence of Superintendent F. D. Boynton during the month of December, was acting superintendent of the Ithaca Public Schools and represented Dr. Boynton at the meeting of the State Examination Board in Albany. Mr. DeLong was also a member of the House of Delegates meeting at Syracuse to enact legislation for the State Teachers Association, and chairman of the junior high school English section at the Elmira meeting of the Southwestern State Teachers Association.

Clarence C. Henson (M.A. 1903) is now superintendent of the Isidore Newman Manual Training School in New Orleans. This school differs in two respects from other schools in the city: It is co-educational throughout all the grades, and it is a complete school plant under one supervision, extending from kindergarten through the senior class of high school. The school is primarily a college preparatory school.

Vivian P. Evans (B.S. 1924) resigned her position last summer, as supervisor of first grade at the University of California, Southern Branch, to accept the position of rural school supervisor of Riverside County, California.

Hannah C. Bynon (Fine Arts 1910) has been supervisor of fine and industrial arts since September, 1910, in the public schools, Fresno, Calif.

Charlotte White (B.S. 1904) is doing primary work with crippled children at Public School 183, Brooklyn. There the percussion band has become a "Uke

Club." The class of eighteen own twelve ukeleles and learn to read their songs.

James W. Baldwin (M.A. 1925) is teaching educational psychology and methods of teaching in the University of Texas, Austin, Tex.

J. G. Flowers (M.A. 1925) is director of training and professor of secondary methods in the East Texas State Teachers College.

Teachers College representatives at the University of California, Southern Branch, Los Angeles, are: Corinne A. Seeds (M.A. 1925), principal of the training school and assistant supervisor of training. Frances Gidding (M.A. 1925), kindergarten-primary supervisor in the training school. Sallie Garrett (student 1925), training teacher in charge of the first grade in the training school.

News Notes from Connecticut

Dean Annie W. Goodrich (graduate student 1916-17), Miss Harmer (M.A. 1925) and Miss Amelia Grant (M.A. 1923) of the Yale School of Nursing, discussed "Nursing Education in Relation to Scientific Development" before a group of college women at Nathan Smith Hall, New Haven, on Monday Evening, January 11. This was one of the meetings arranged by the education committee of the New Haven branch of the American Association of University Women. The meeting was most stimulating and enlightening.

Dr. Bessie Lee Gambrill (Ph.D. 1922) has been promoted from assistant professor of elementary education at Yale University to associate professor in that subject, and her assignment will be in the Yale Graduate School. This is the first appointment of a woman to hold an associate professorship in Yale in a field other than nursing.

Miss Helen Stewart (M.A. 1925) has been appointed assistant professor of nursing in the School of Nursing at Yale.

Mr. J. L. Meader (Ph.D. 1924), principal of the State Normal School at New Haven, was the speaker at the weekly meeting of the Lions Club at the Hotel Taft on February 4. Mr. Meader, in the course of his address, pointed out the differences between education as it is to-day in the public schools of Connecticut and as it was in the days when the first school was established in 1641.

Raymond M. Mosher (Ph.D. 1923), director of training, New Haven State Normal School, has been appointed lecturer in educational psychology, Yale University. He has been giving an extension course on tests and measurements for the teachers of East Hartford, Conn. Mr. Mosher recently addressed the Mothers Educational Association (Jewish) of New Haven on "Problems in the Preparation of Elementary School Teachers."

CONNECTICUT TEACHERS COLLEGE CLUB

The fourteenth annual meeting of the Connecticut Teachers College Club was held in New Haven, February 13, following a luncheon at the Lawn Club.

Dr. Annie Goodrich, dean of the school of Nursing, Yale University, and president of the New Haven group of the Teachers College Club, and Dr. Bessie L. Gambrill, professor of elementary education, Yale University, and a former president of the club, spoke informally on the aims and activities of the New Haven group.

The guest of the club from Teachers College was Dr. Lester M. Wilson, of the International Institute, who gave an enlightening and interesting address on "American Education Transplanted." Dr. Wilson has recently completed a tour of the world, studying education in

those countries where American ideals and procedures in education are being developed. Special studies were made in Mexico, Porto Rico and the Philippines.

At this meeting the club added as honorary members Miss Helena Miller, of Hartford, and Miss Janet M. Purdue, of New Haven. Both Miss Miller and Miss Purdue have been associated with the work of the club, are interested in the work of Teachers College, and are participating in many broad educational movements.

The following officers were elected for the ensuing year: President, Miss Marion Sheridan, New Haven, Conn.; vice President, Mr. Percival S. Barnes, superintendent of schools, East Hartford, Conn.; secretary-treasurer, Mrs. A. W. Jennings, 1172 Chapel Street, New Haven, Conn.